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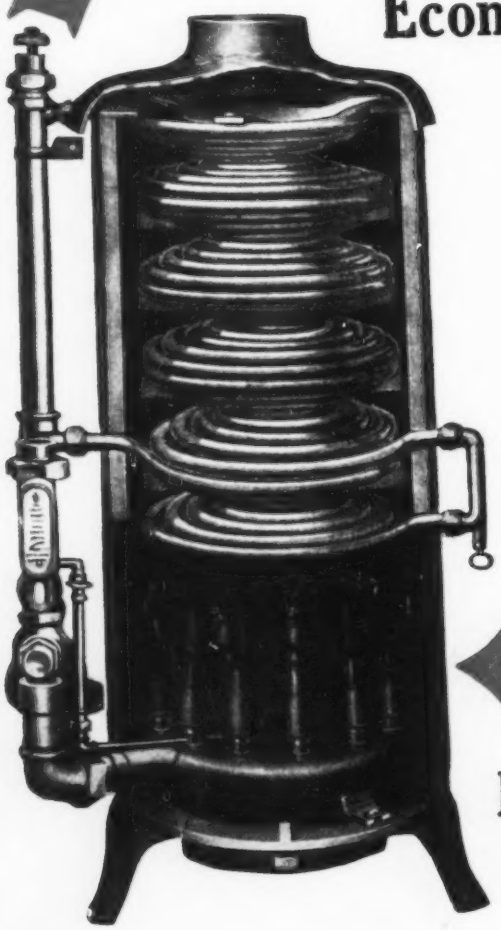

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VOL. XLII. No. 6 DECEMBER, 1917 SERIAL NO. 231

THE ARCHITECTURAL RECORD

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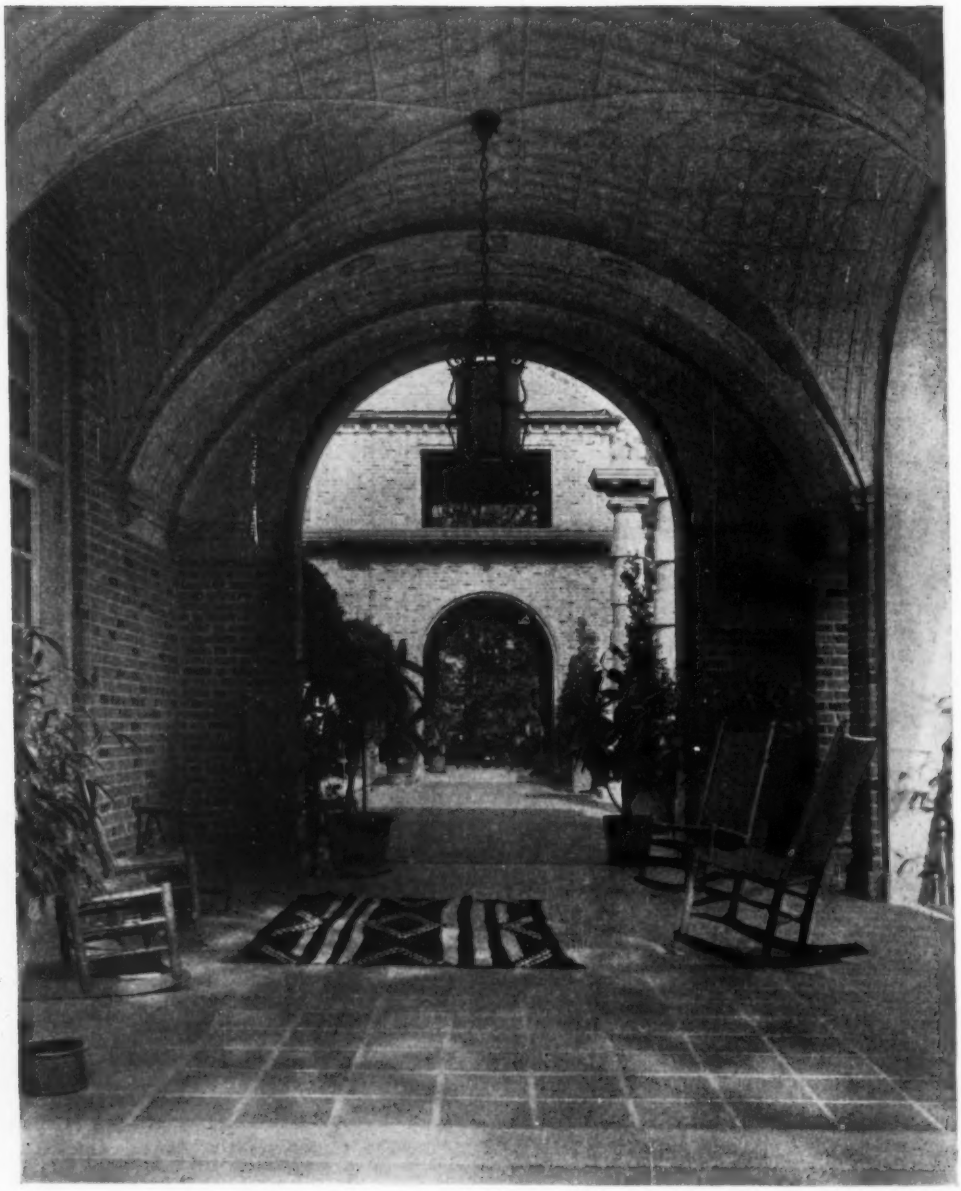


FIG. 1. PORCH — RESIDENCE OF JAMES M. WILLCOX, ESQ., RADNOR, PA. HOWARD SHAW, ARCHITECT.

THE ARCHITECTVRAL RECORD

VOLVME XLII NVMBER VI

DECEMBER, 1917

RECENT COVNTRY HOVSE WORK of HOWARD SHAW

BY
PETER B WIGHT

THE four country houses by Howard Shaw, which are here illustrated, form an interesting study, because, while differing greatly from one another, each having its own individuality, they exhibit in common certain features of plan and qualities of design characteristic of Mr. Shaw's work. Relying for artistic effect upon a balance of opposite parts rather than upon symmetry, Mr. Shaw is in a position to adapt his plan naturally to the circumstances of the site and of the household; and the rational procedure noted in the case of the plan is manifest again in the design, which is conceived as an expression of function, a premeditated expression formulated with the urbanity of art.

Mr. Shaw's work is further noteworthy for its sanity with respect to stylistic tradition. It is evident from the houses here illustrated that wherever historic art forms seemed appropriate for an American country place there was no hesitation about using them; on the other hand, there is frequent resort to invention, an invention tempered by cultivated taste and free from eccentricity.

The houses are those respectively of James M. Willcox, at Radnor, Pa. (Figs. 1 to 6), of George Pick, at Highland Park, Ill. (Figs. 7 to 14), of Clayton Mark, at Lake Forest, Ill. (Figs. 15 to 22) and of Edward L. Ryerson, also at Lake Forest, Ill. (Figs. 23 to 30).

It is interesting to note at the outset that the first of these houses, the Willcox residence at Radnor, Pa., has in its main entrance Roman Doric columns and pilasters, which carry an entablature surmounted by a simple cornice relieved with rather flat modillions on the under

side, which are not Doric. The cornice ceases to be classic, even in feeling, as soon as it departs from the entablature of the entrance composition and, running out on both sides, does not end until it has surrounded the entire building, forming a belt course. Then we discover that it is an architectural shelf intended to make the house appear low; it turns the second story and the slate roof into an attic, a contrivance which works in admirably with the loggias of the first and upper stories on the garden side.

We reach the house through a forecourt (Fig. 4), on one side of which is the approach for vehicles and on the other a footpath. Passing through the entrance loggia, we are in the "waist" of the house, marked "vaulted gallery" on the plan, which leads in every direction; and, by the way, a central gallery communicating with all parts of the building is a feature of many of Mr. Shaw's country houses. When you are in this one and the three south doors are open, you are practically out of doors. At the right are doors to the living room, the library and the stair hall; at the left, doors to the dining room, the reception room and the service department.

Nearly every room has windows on more than one side, the house being one hundred and sixty feet long from east to west and only thirty-two feet wide at the "waist." Beyond the court is a great terrace garden one hundred and forty-four feet long and sixty feet wide. From the southwest corner of the terrace was taken the view of the garden side of the house reproduced in Fig. 3. As will be seen from this view, the living porch and the dining porch are two stories high and furnish sleeping porches for the two principal bedrooms in the second story, all within the boundaries of the main wall of the house.

The building stands on the south slope of Camp Hill, occupied by an outpost of Washington's army when it was encamped at Valley Forge. It is reached by a long drive, which passes the service building (Fig. 5) at the foot of the hill, and, almost circling the hill, enters the high-walled forecourt on the north side. The gate in the forecourt wall opposite the drive entrance leads to the tennis courts and to a tea-house on the crest of the hill, where there is a wonderful view toward the west.

The exterior of the house is faced with gray wire cut brick, and Bedford stone trimming is used everywhere. The garden front, on the south, looks down through a broad glade cut through the woods which surround the house and its clearing on every side. The terrace, a few feet lower than the court level, is bounded by heavily buttressed retaining walls fifteen to eighteen feet high, which are surmounted by a stone balustrade. In the court is a large sunken pool, and on the terrace are two raised fountains.

The interior of the house is not shown in the present illustrations. The living room, marked "salon" on the plan, is wainscoted with French walnut and hung with Flemish tapestries, and has a painted ceiling. The dining room is also wainscoted, and the library, built with a vaulted ceiling, is finished in oak.

Our second example of Mr. Shaw's recent country house work is the residence of George Pick, at Highland Park, Illinois, on Lake Michigan. This suburb of Chicago is twenty-five miles north of the city. The southern part of Highland Park was originally an almost impenetrable forest, which has been allowed to remain except where sites have been cleared for country residences. The ground is high above the lake, and its eastern edge forms a bluff bordering the beach, which is of sand and adapted for summer bathing. The land is traversed by ravines that contain the natural water courses draining into the lake. The ideal site for a residence at Highland Park is a secluded clearing on a ravine.

Mr. Pick's house stands on the side of one of the most picturesque of the ravines. The view as one drives around the last bend of the private road in approaching it is very nearly that shown in Fig. 9. The ground slopes off to the left, the slope increasing until it becomes very steep, and the side of the ravine is traversed by footpaths with stepping stones down to the brook. The two-story living porch, seen at the left, is partly over the ravine, and its founda-

FIG. 2. ENTRANCE FRONT—RESIDENCE OF JAMES M. WILLCOX, ESQ., RADNOR, PA. HOWARD SHAW, ARCHITECT.

FIG. 3. GARDEN FRONT—RESIDENCE OF JAMES M. WILLCOX, ESQ., RADNOR, PA. HOWARD SHAW, ARCHITECT.

FIG. 4. FORECOURT—RESIDENCE OF JAMES M. WILLCOX, ESQ. RADNOR, PA. HOWARD SHAW, ARCHITECT.

tions are twenty feet below the first floor. It commands beautiful vistas through and across the ravine. There is no garden near the house, aside from the plantings immediately around it and on the terraces seen in Fig. 11, at the southwest side of the house.

The main entrance is through a loggia on the northeast side, where marble columns stand in front of brick piers to support statues not yet in place.

The walls, where not faced with wire cut brick, and where stucco finish is seen, are of hollow building tile. All the windows are arched with a single course of wire cut brick running through the wall. The living porch (Fig. 11) is built with brick piers in the first story and solid oak timbers, unpainted, in the second story.

Opposite the three arches of the loggia are corresponding arches giving into the entrance hall, two of which are filled with windows. Three polished black marble arches, each in three pieces, running through the wall, and three stone steps give into the garden room (Fig. 14), and three arches opposite to these lead out onto the garden terrace (Fig. 11). The garden room is also called the Chinese room, as it contains much Chinese furniture, and there is a suggestion of Chinese forms in the details of the architecture and decorations. The entrance hall and the garden room have marble floors.

Thus, it will be seen, one can look through the house from northeast to southwest in three places where the openings are "in range." There is another vista in the opposite direction through the dining room, garden room and living room out through the bay window of the latter toward the ravine. The living porch is wonderfully attractive in summer, and yet the building is equally adapted for winter as for summer use.

Like all of Mr. Shaw's work, this house is remarkable for simplicity in design, judgment in the choice of materials and sound workmanship. Every detail has been carefully designed and conscientiously executed.

Lake Forest is about five miles north of Highland Park. It has a similar situation on Lake Michigan, with a dense native forest, picturesque ravines, high bluff and sandy beach. It is more exclusive, and nearly all of the forest reserve is owned by a few wealthy families. The wooded part lies between Lake Michigan and the tracks of the Chicago and Northwestern Railroad and the Chicago and North Shore Electric Road. Immediately west of the railroads is the business section, which has lately been rebuilt from designs by Howard Shaw; west of the business section, and continuing for more than five miles, is a part of the town which was originally divided off into farms. These have been gradually acquired by wealthy persons who desire large areas for landscape improvement.

The eastern part of Lake Forest between the tracks and the lake was laid out as the seat of a university and a boys' school, both of which still exist. They occupy the original clearing in the woods. The whole woodland is traversed by curved roads which divide it into irregular plots of from twenty to forty acres.

Two of the new residences in the wooded section of Lake Forest are the work of Howard Shaw. One of these is the house of Clayton Mark, which looks out upon the lake from the garden side. Its plan is in Mr. Shaw's characteristic manner where a site has commanding views in opposite directions. It is long and narrow and most of the rooms have windows on two sides. While it has a length of one hundred and ninety feet from south to north, excluding open porches, it is only thirty-two feet wide at the "waist," including the entrance porch, or twenty-one feet through the enclosed part. There is a near approach to symmetry on the entrance front, but there are dimensional variations along the whole distance. The house faces one of the north and south roads of Lake Forest—that which is nearest the lake. On the other side is a very large terrace garden extending one hundred and twenty-four feet from south to north and as far east as the dining porch. The stone entrance porch and loggia are in Mr. Shaw's favorite Roman Doric style, and the whole design shows a more classic feeling than we are accustomed to see

FIG. 5. SERVICE BUILDINGS—RESIDENCE OF JAMES M. WILLCOX, ESQ., RADNOR, PA. HOWARD SHAW, ARCHITECT.

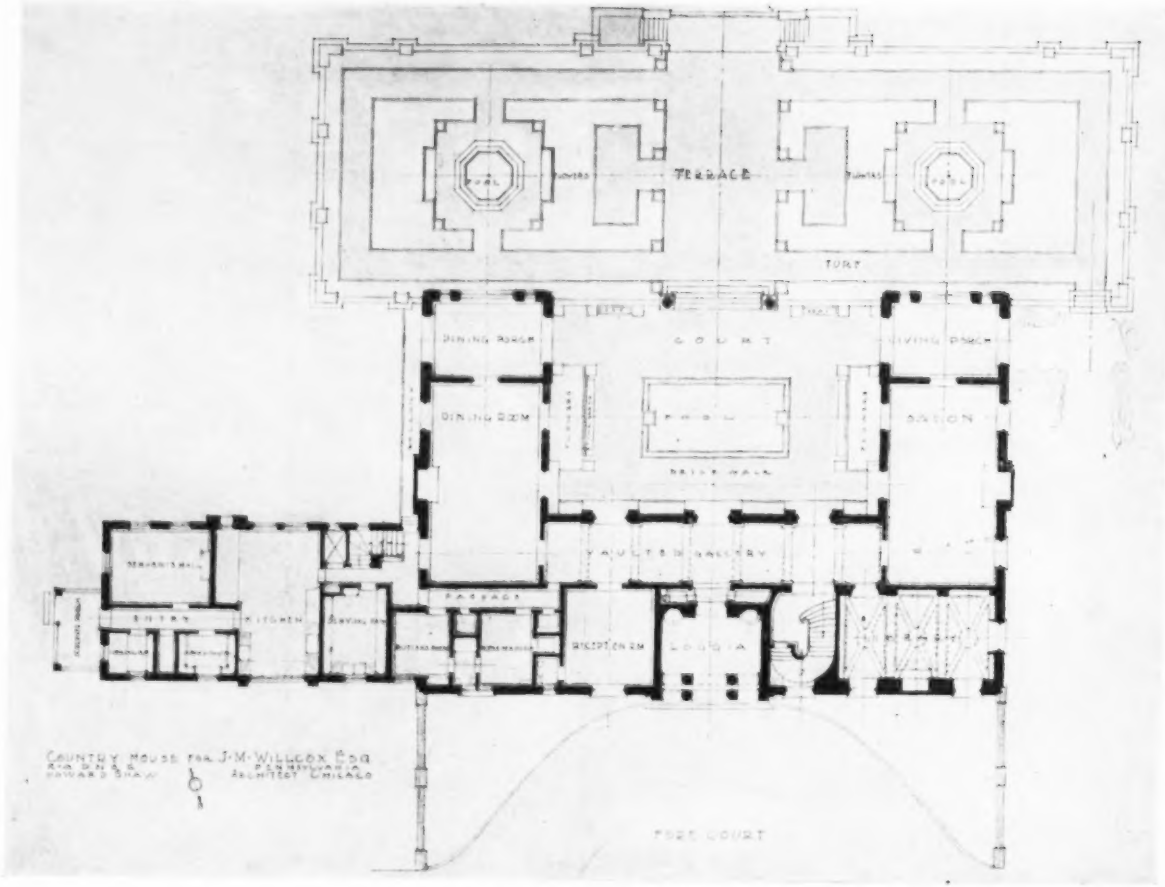


FIG. 6. GROUND FLOOR PLAN—RESIDENCE OF JAMES M. WILLCOX, ESQ., RADNOR, PA. HOWARD SHAW, ARCHITECT.

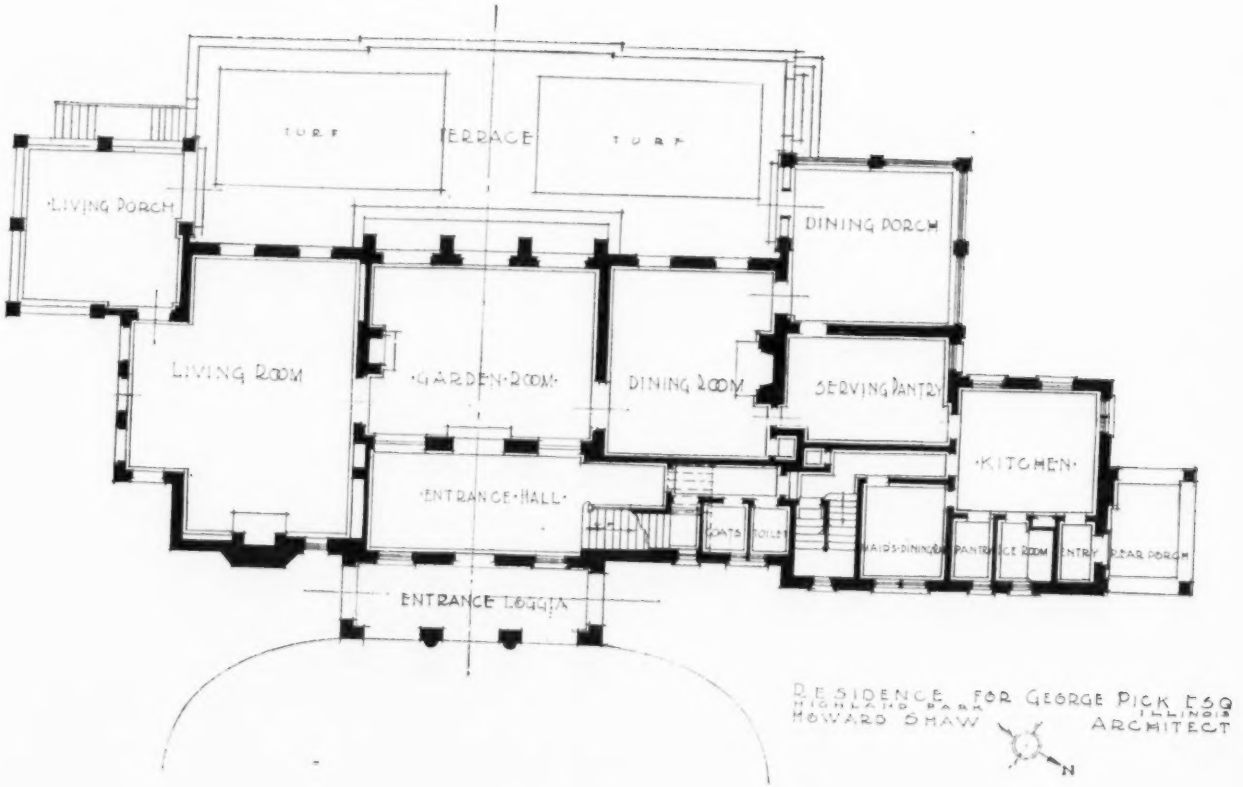


FIG 7. GROUND FLOOR PLAN—RESIDENCE OF GEORGE PICK, ESQ., HIGHLAND PARK, ILL. HOWARD SHAW, ARCHITECT.

FIG. 8. ENTRANCE—RESIDENCE OF GEORGE PICK, ESQ., HIGHLAND PARK, ILL. HOWARD SHAW, ARCHITECT.

FIG. 9. ENTRANCE FRONT—RESIDENCE OF GEORGE PICK, ESQ., HIGHLAND PARK, ILL. HOWARD SHAW, ARCHITECT.

FIG. 16. GARDEN FRONT—RESIDENCE OF GEORGE PICK, ESQ., HIGHLAND PARK, ILL. HOWARD SHAW, ARCHITECT.

FIG. 11. TERRACE AND NEAR VIEW OF GARDEN FRONT—RESIDENCE OF GEORGE PICK, ESQ., HIGHLAND PARK, ILL. HOWARD SHAW, ARCHITECT.

FIG. 12.—DINING PORCH—RESIDENCE OF GEORGE PICK, ESQ., HIGHLAND PARK, ILL. HOWARD SHAW, ARCHITECT.

FIG. 13. LIBRARY AND LIVING ROOM—RESIDENCE OF GEORGE PICK, ESQ., HIGHLAND PARK, ILL.
Howard Shaw, Architect.

FIG. 14. GARDEN ROOM—RESIDENCE OF GEORGE PICK, ESQ., HIGHLAND PARK, ILL.
Howard Shaw, Architect.

FIG. 15. ENTRANCE—RESIDENCE OF CLAYTON MARK, ESQ., LAKE FOREST, ILL. HOWARD SHAW, ARCHITECT.

FIG. 16. ENTRANCE FRONT—RESIDENCE OF CLAYTON MARK, ESQ., LAKE FOREST, ILL. HOWARD SHAW, ARCHITECT.

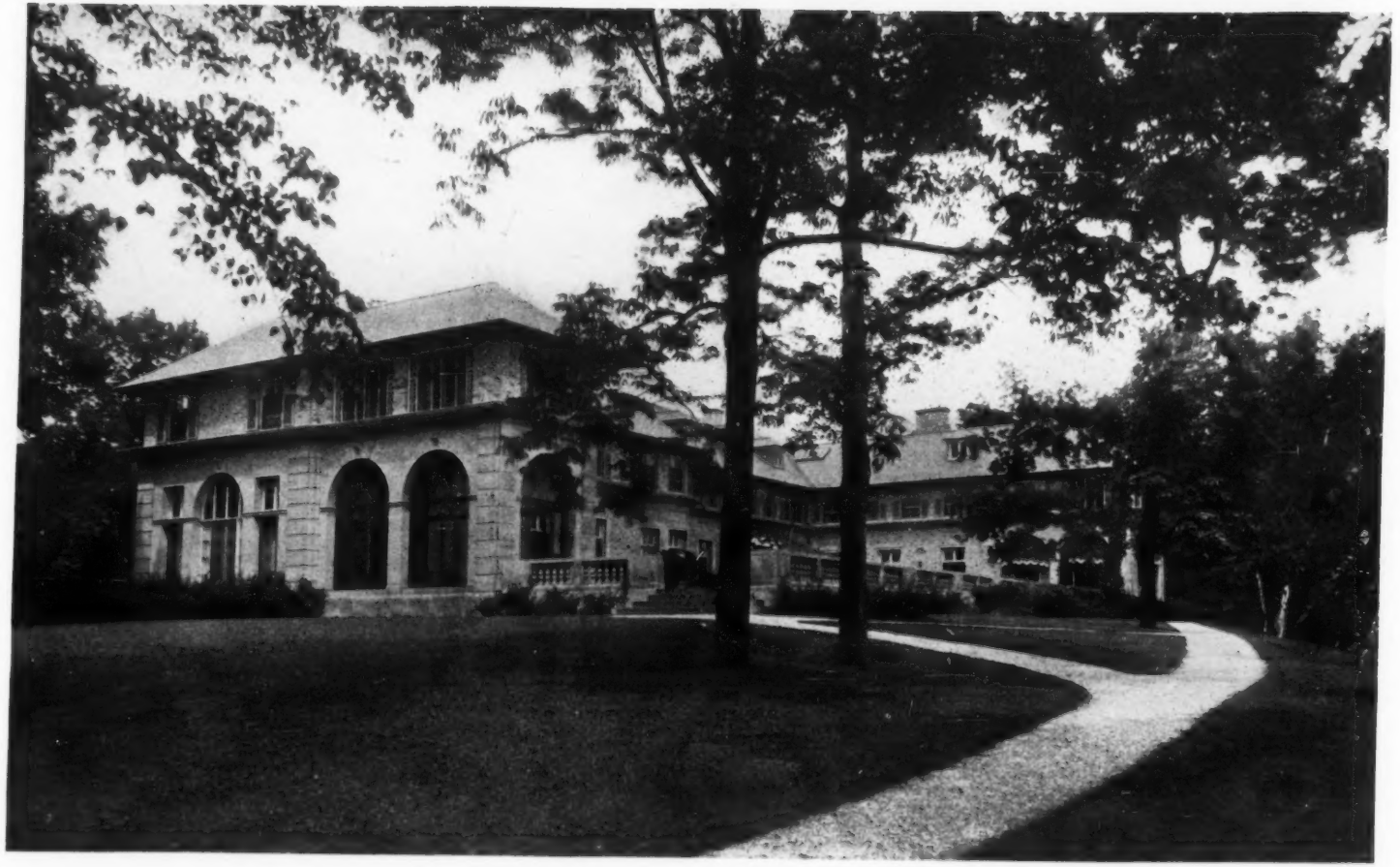


FIG. 17. GARDEN FRONT—RESIDENCE OF CLAYTON MARK, ESQ., LAKE FOREST, ILL. HOWARD SHAW, ARCHITECT.

FIG. 18. TERRACE—RESIDENCE OF CLAYTON MARK, ESQ., LAKE FOREST, ILL. HOWARD SHAW, ARCHITECT.

FIG. 19. GALLERY — RESIDENCE OF CLAYTON MARK, ESQ., LAKE FOREST, ILL. HOWARD SHAW, ARCHITECT.

FIG. 20. DINING ROOM—RESIDENCE OF CLAYTON MARK, ESQ., LAKE FOREST, ILL.
Howard Shaw, Architect.

FIG. 21. BILLIARD ROOM—RESIDENCE OF CLAYTON MARK, ESQ., LAKE FOREST, ILL.
Howard Shaw, Architect.

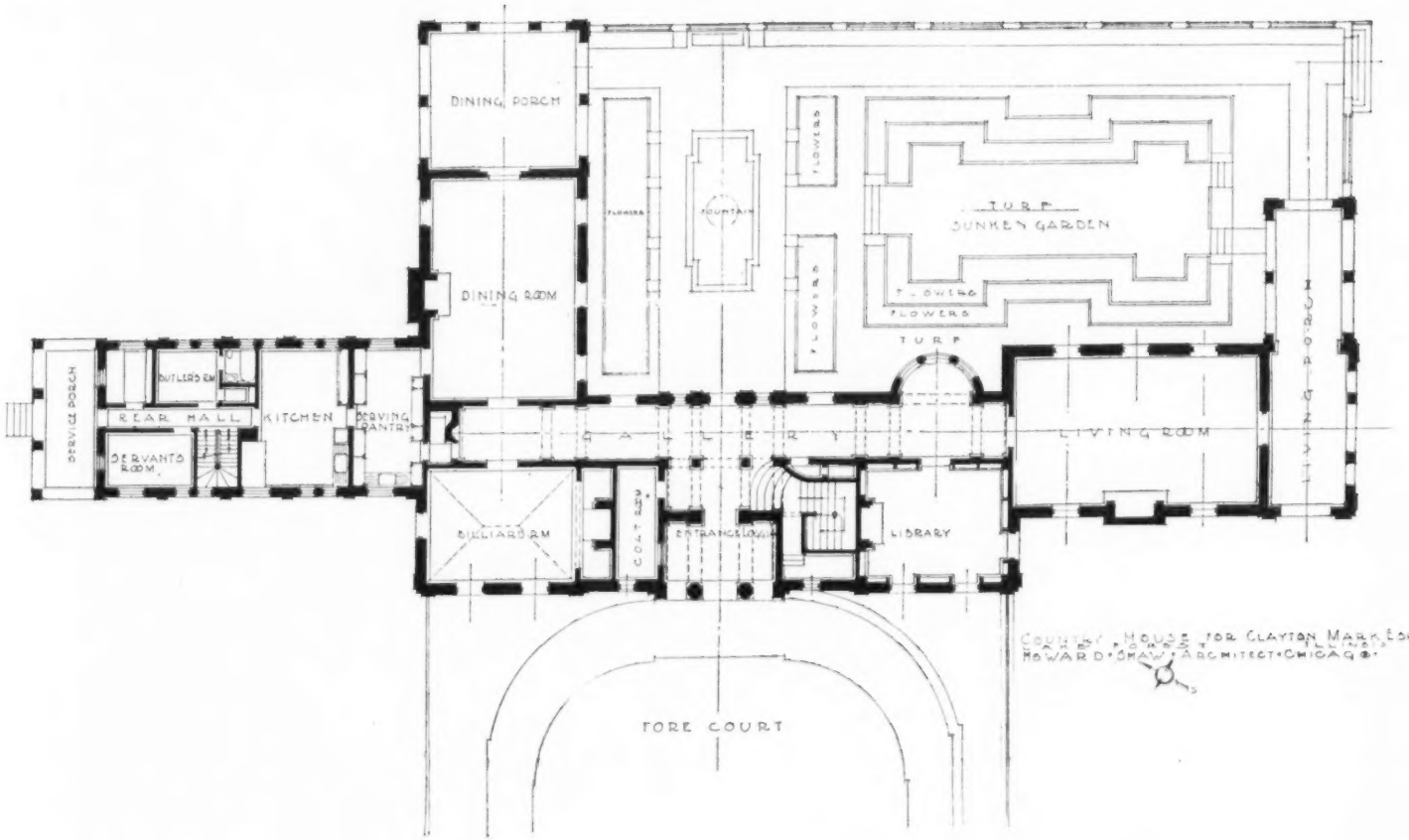


FIG. 22. GROUND FLOOR PLAN—RESIDENCE OF CLAYTON MARK, ESQ., LAKE FOREST, ILL. HOWARD SHAW, ARCHITECT.

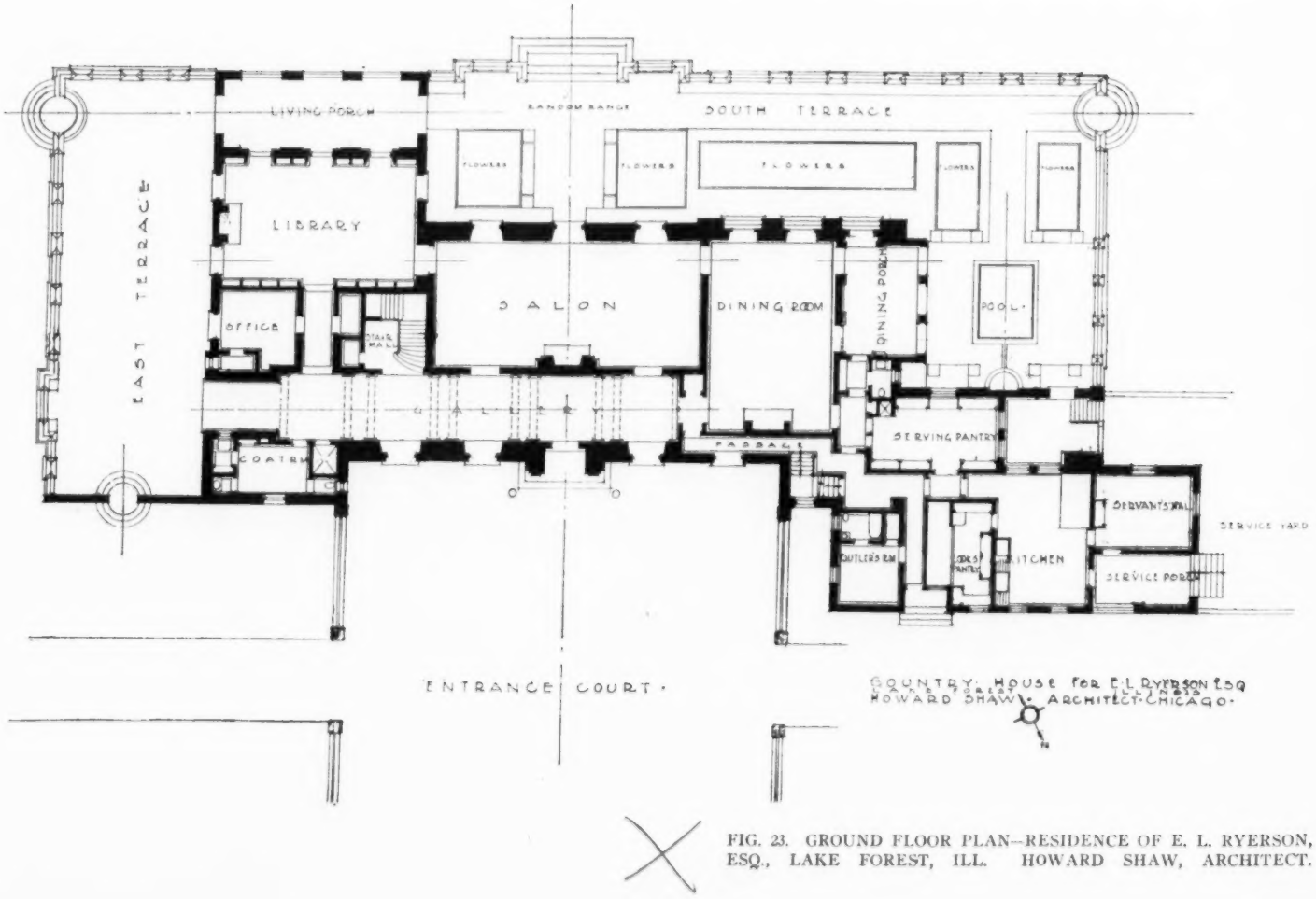


FIG. 23. GROUND FLOOR PLAN—RESIDENCE OF E. L. RYERSON, ESQ., LAKE FOREST, ILL. HOWARD SHAW, ARCHITECT.

FIG. 24. ENTRANCE FRONT—RESIDENCE OF EDWARD L. RYERSON, ESQ., LAKE FOREST, ILL. HOWARD SHAW, ARCHITECT.

FIG. 25. GARDEN FRONT—RESIDENCE OF EDWARD L. RYERSON, ESQ., LAKE FOREST, ILL. HOWARD SHAW, ARCHITECT.

FIG. 26. LOGGIA—RESIDENCE OF EDWARD L. RYERSON, ESQ., LAKE FOREST, ILL. EDWARD SHAW, ARCHITECT.

FIG. 27. GALLERY—RESIDENCE OF EDWARD L. RYERSON, ESQ., LAKE FOREST, ILL.
Howard Shaw, Architect.

FIG. 28. LIBRARY—RESIDENCE OF EDWARD L. RYERSON, ESQ., LAKE FOREST, ILL.
Howard Shaw, Architect.

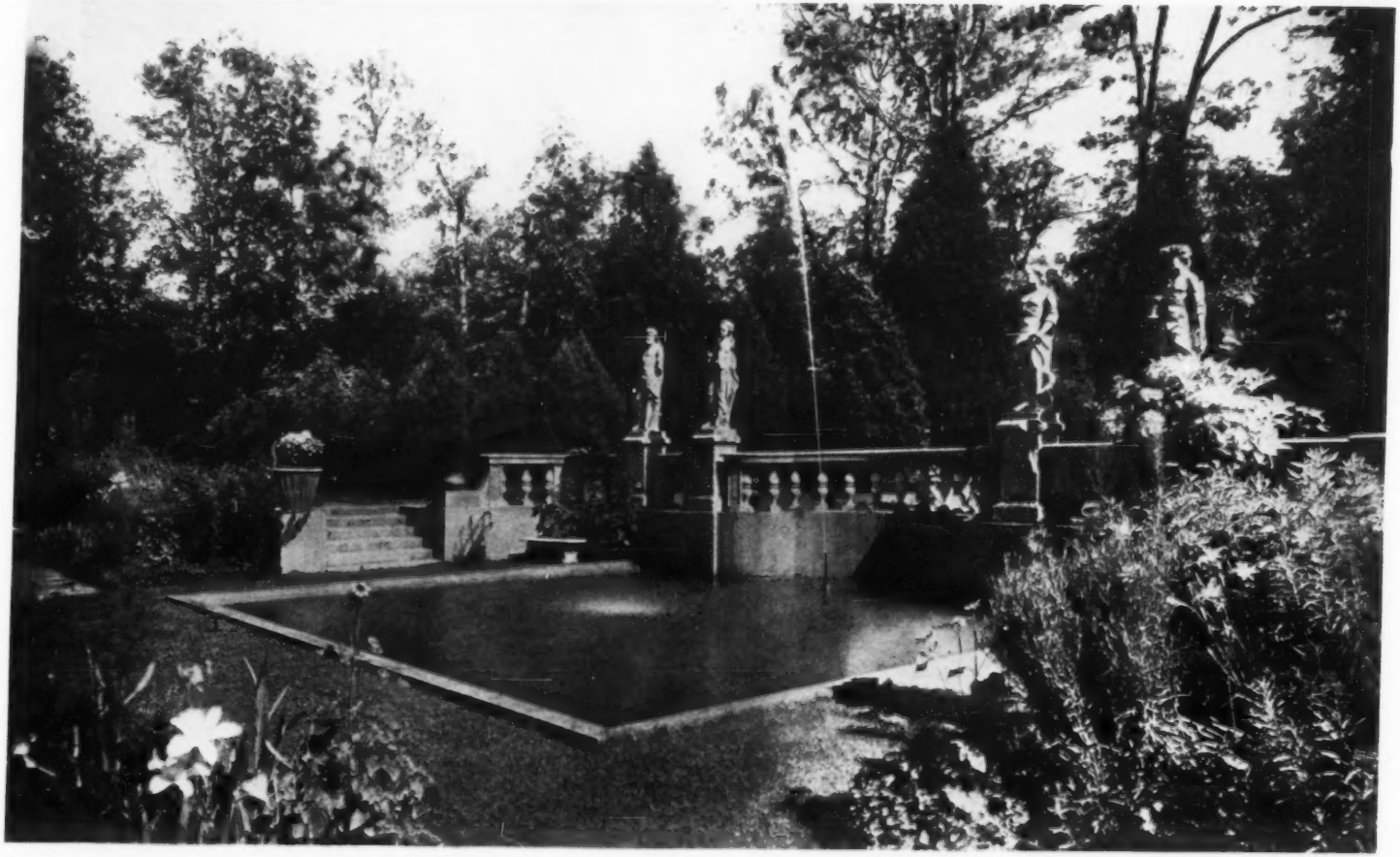


FIG. 29. GARDEN—RESIDENCE OF EDWARD L. RYERSON, ESQ., LAKE FOREST, ILL. HOWARD SHAW, ARCHITECT.

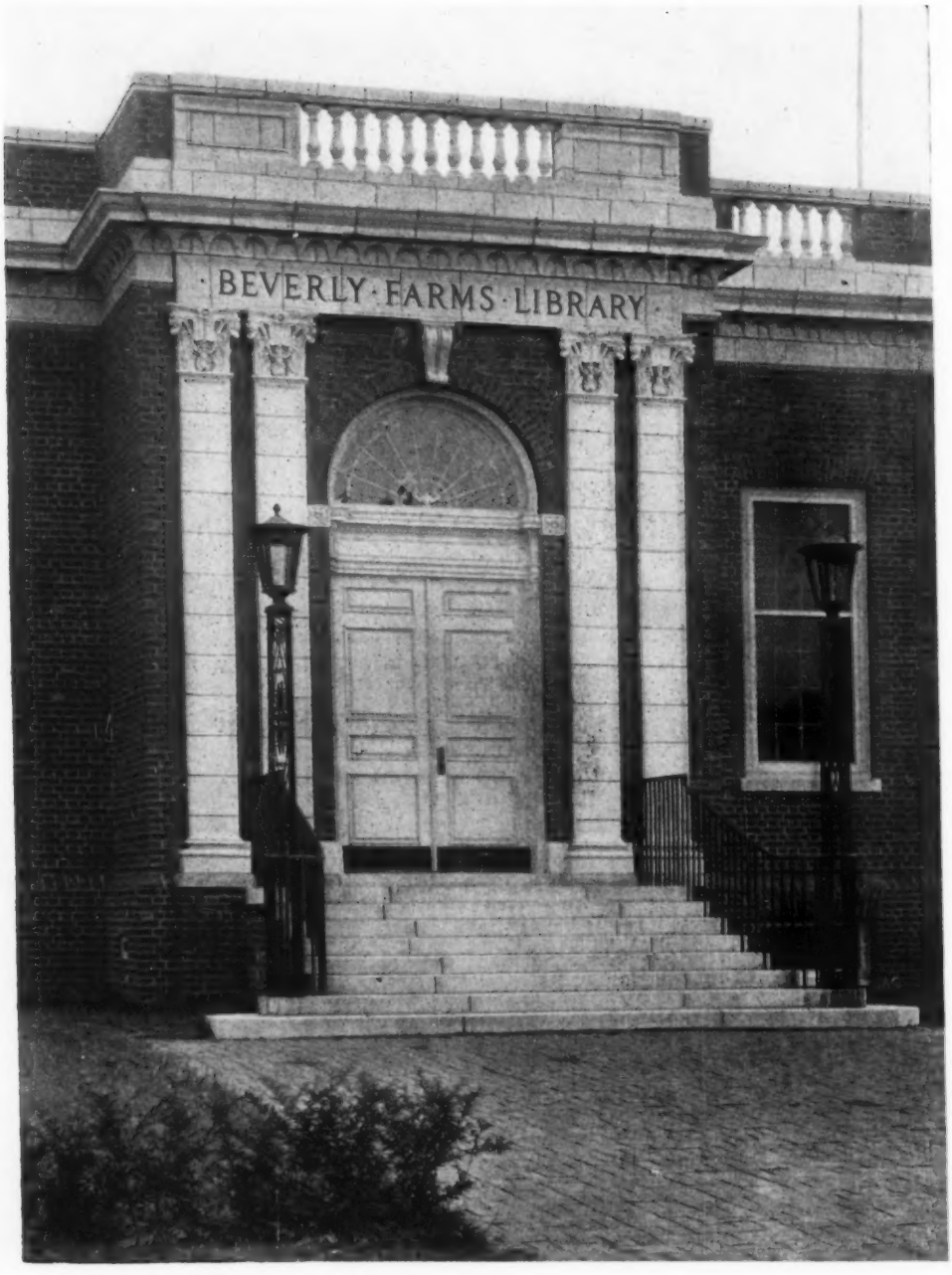
FIG. 30. DINING ROOM—RESIDENCE OF EDWARD L. RYERSON, ESQ., LAKE FOREST, ILL.
Howard Shaw, Architect.

in his buildings. The small windows on each side of the entrance have beautiful bronze grilles. The Doric cornice, as in the Willcox house at Radnor, Pa., is continued around the whole building, giving a low effect to the design by treating the second story, in combination with the slate roof, as an attic.

The main feature of the interior is the fine "gallery" on the first story, eighty-eight feet long, which connects all of the principal rooms. At one end, opposite the library, is a semicircular bay window, which forms a charming nook, with the flower garden for a background.

The residence of Edward L. Ryerson, near the south end of the woodland section of Lake Forest, cannot be seen from any great distance, being approached only by a private road through the forest. The road enters the forecourt at the left or southeast side. The east terrace can be used as a private entrance to the house, through a doorway of the "gallery." The gallery is a feature of the house. It proceeds from the dining room, passes the main entrance from the forecourt, the two doors to the salon, the stairway hall and the library entrance, ending at the doorway from the east terrace. It is lined with sand-rubbed cut stone, the ceiling is vaulted and the floor is paved with marble in two harmonizing colors. All the rooms on this floor command views across the terraces and porches.

The garden is an exquisite piece of Italian landscape designed by Jens Jensen, and was contrived for the purpose of displaying four statues of the sixteenth century, which Mr. Shaw brought from Italy expressly for Mr. Ryerson.



MAIN ENTRANCE—BEVERLY FARMS
LIBRARY, BEVERLY FARMS, MASS.
LORING & LELAND, ARCHITECTS.

The BEVERLY FARMS LIBRARY
BEVERLY FARMS. MASS.

Loring & Leland, Architects

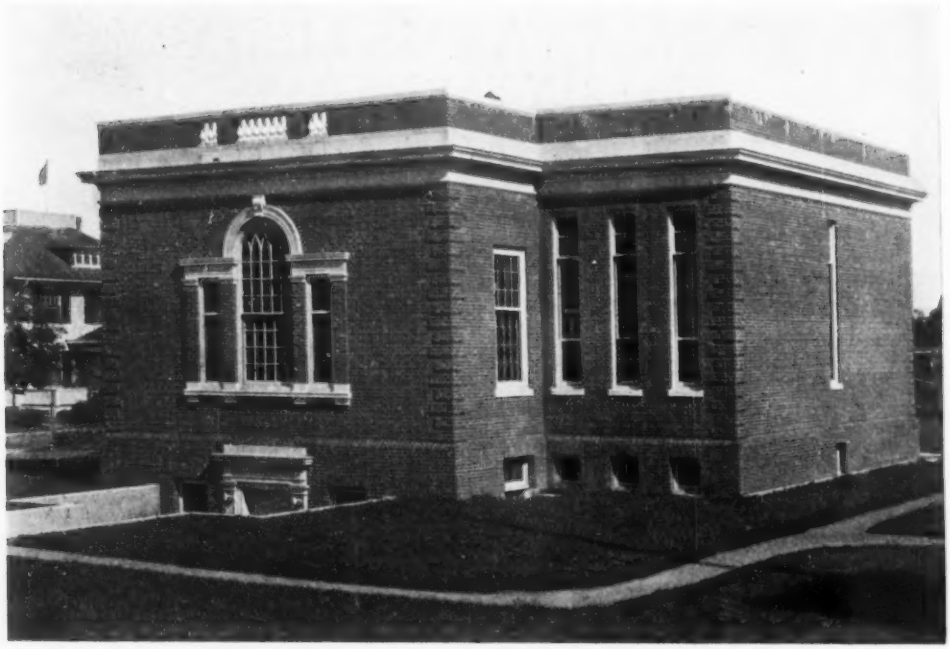
By MEYRIC R. ROGERS

THE small branch public library as an architectural entity is a comparatively novel development. Until recently it seemed to be the general custom among country communities to house their book collections either in some converted dwelling or in whatever unused rooms there happened to be in an extant public building. Brought about partly by overcrowding due to increase in number of volumes, but, perhaps to a greater degree, by an awakening civic or group consciousness, a noticeable change in this attitude has taken place. The small library has become efficient. The vitalizing and stimulating influence of the various state and national library associations has been felt strongly by these lesser and heretofore isolated libraries. They are kept up to date, both in management and contents, becoming ready and responsive media, if not actually sources of initiative, for the expression of whatever civic pride the smaller communities may feel.

In this light the branch library at Beverly Farms, Massachusetts, recently designed by Loring and Leland, may hold a really significant position. The particular conditions which had to be taken into consideration in the design of this building also hold in the case of many other communities of a similar nature; that is, while likely to see greater use during the summer months, it also had to be made convenient and comfortable for the whole year, at the same time economy in upkeep being a stern necessity. The successful solution of this problem hence forms a valuable professional precedent for future work of this nature.

The building is Georgian Colonial in style, consisting of two simple symmetrical wings linked by a central dominating feature. Behind these wings and forming in plan the stem of a squat "T" is an extension holding the working portion of the library. The wings form one open room, to which the projecting porch furnishes a weather vestibule. On the front façade this room is lit by four large square-headed windows of twenty-eight lights each, two windows to each wing. These features are, however, kept severely plain, the façade being dominated by the central motive. The end of each wing contains a well-designed Palladian window, which, although admirable in relation to the end elevations alone, does not tie in very closely with the fenestration of the façade. A very pleasing composition is obtained on one end by the introduction, in an area below grade, of the entrance of the basement lecture hall. In itself an excellent bit of detail, it is treated frankly and simply to express the function of that particular portion of the building, while the ship lanterns on either pilaster are appropriate to the locality if not to the architectural precedent. The fenestration of the rear is also effective in its direct expression of the internal requirements and the relief of large blank spaces.

In any consideration of the exterior, however, precedence must be given to the entrance motive. A broad flight of eight granite steps gives adequate footing to the doorway and its frame, and serves to emphasize the slender dignity of the order. The doorway itself has evidently received extreme care and consideration on the part of the designer. Not only are the proportions and detail of the woodwork really fine, but it has all been crowned by a fanlight with leading of an unusually handsome design. All



REAR VIEW—BEVERLY FARMS LIBRARY, BEVERLY FARMS, MASS.
Loring & Leland, Architects.

this is framed by a frankly applied motive of coupled pilasters with their corresponding entablature growing out of the wall cornice. The frieze and architrave, it is interesting to note, are supplied by the name plaque, a decidedly ingenious device for giving the necessary reveal. Attention should be called to the design of the pilaster caps, the use of the shell and book expressing respectively the seaside locality and the function of the building. In order to give proper relief to these interesting modifications the bell of the cap has been tinted with a golden tone of lower value than the raised surfaces.

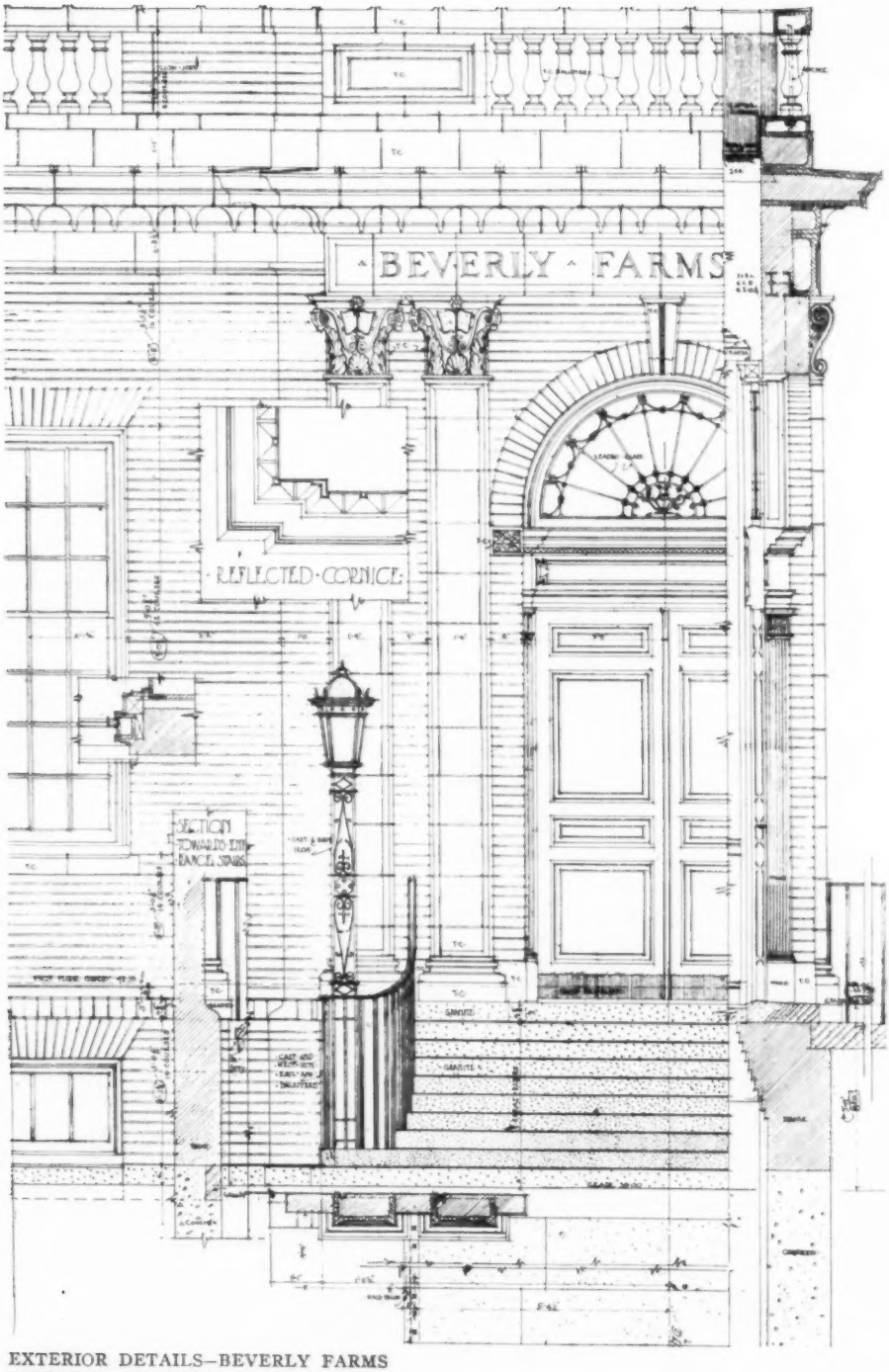
The trim has been executed in terra-cotta instead of the usual limestone, an economical device used throughout with apparently excellent results. The pieces are small enough to avoid distortion, and the danger of staining from impure atmosphere is of course negligible.

The brickwork is simple English bond throughout, relieved by brick quoining and a moulded water-table at the base. The cornice is one of the most interesting features of the elevation. The use of the corbeled bed mould is rather unusual even in Colonial work, and in this case gives just about the right amount of light and shade. The balusters of the attic are of a very satisfactory design, but one feels that the corners might have been strengthened by the continuance of the quoin treatment of the wall below.

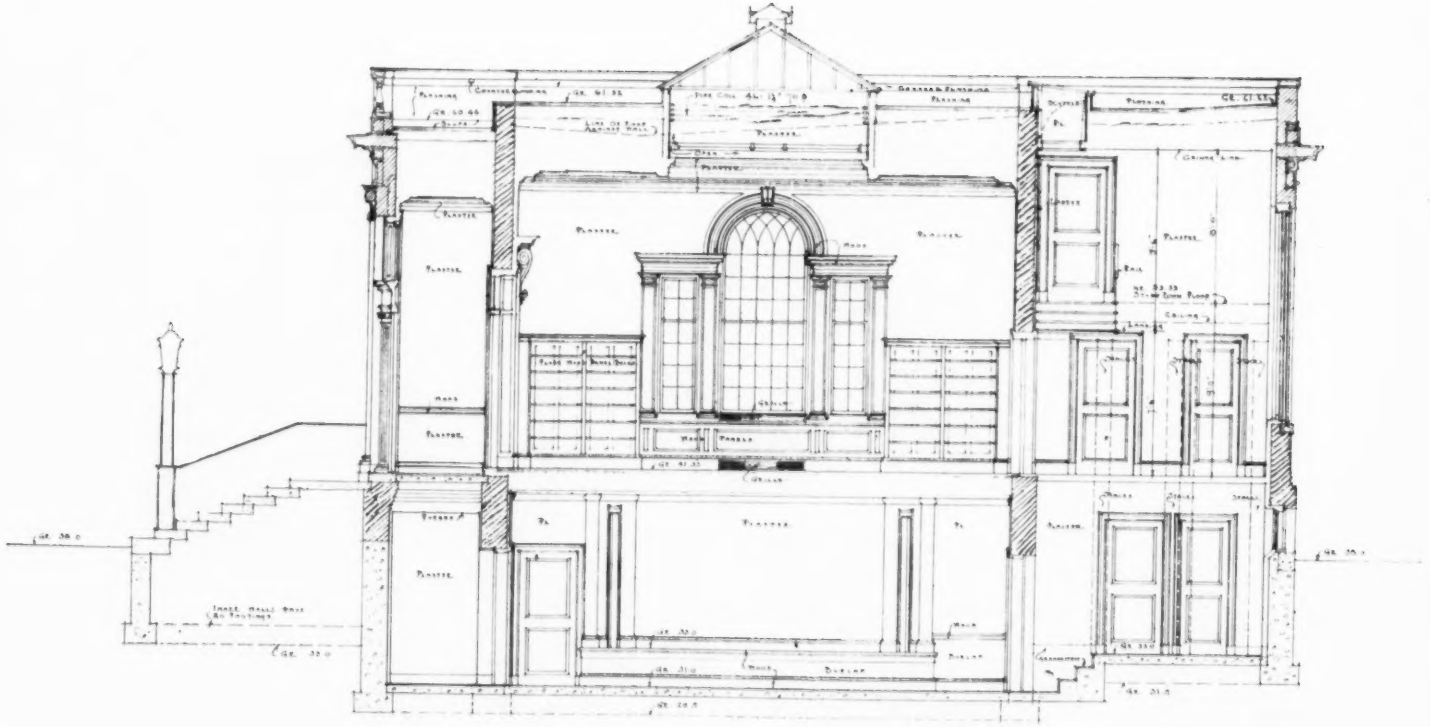
On entering we find that the reading room is practically divided into two sections for convenience of use, by bookcases flanking the entrance and by the delivery desk opposite. The right-hand portion is for use by the children, and the whole is easily controlled from the central desk.

The entire expression of the room is one of quiet coolness without being either cold or formal. The walls are of a soft low intensity green, fairly high in value, which harmonizes excellently with the

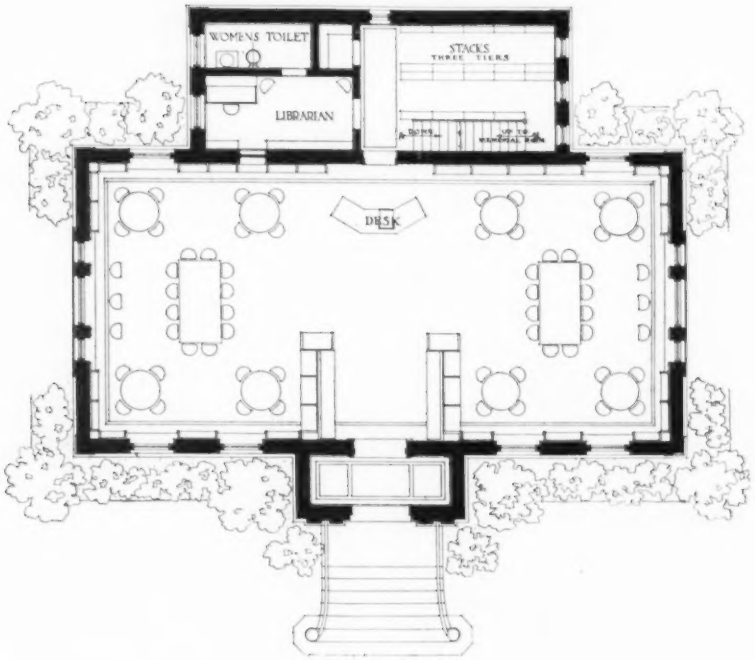
BEVERLY FARMS LIBRARY, BEVERLY FARMS, MASS. LORING & LELAND, ARCHITECTS.



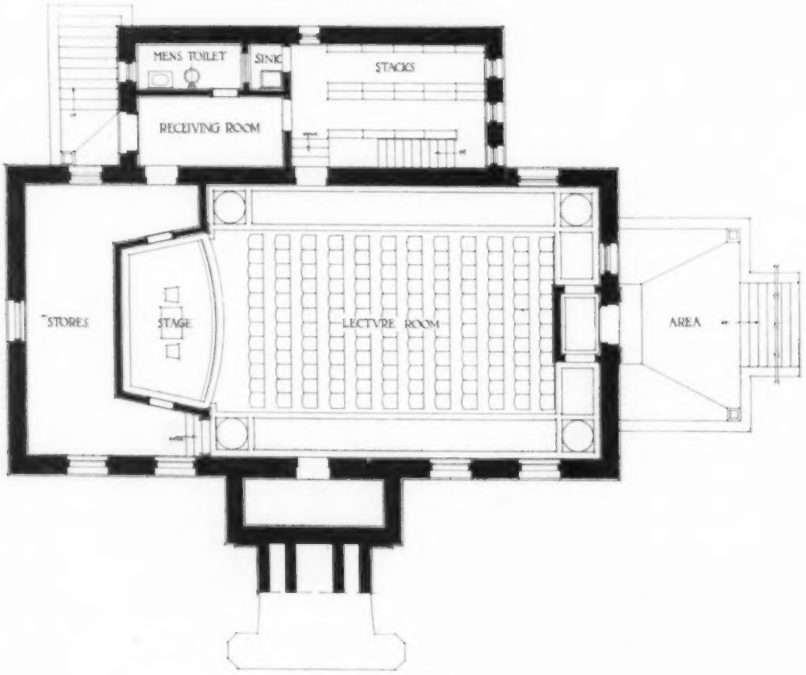
EXTERIOR DETAILS—BEVERLY FARMS LIBRARY, BEVERLY FARMS, MASS. LORING & LELAND, ARCHITECTS.



SECTION THROUGH ENTRANCE—BEVERLY FARMS LIBRARY.
BEVERLY FARMS, MASS. LORING & LELAND, ARCHITECTS.



Main Floor.



Basement.

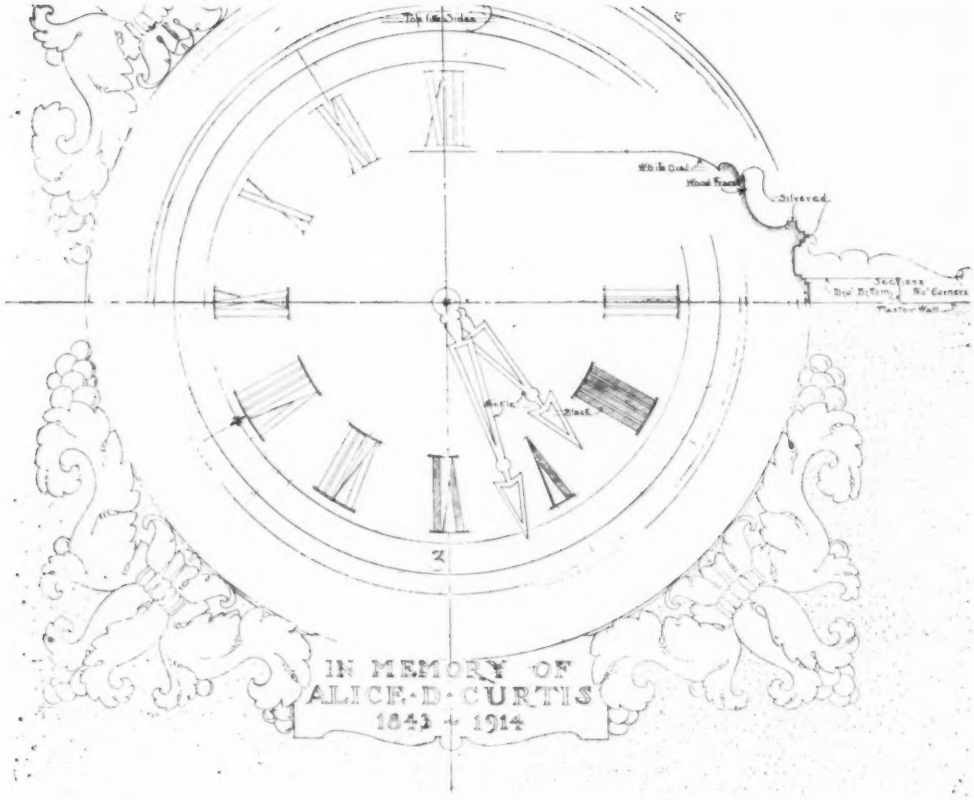
FLOOR PLANS—BEVERLY FARMS LIBRARY, BEVERLY FARMS, MASS.
Loring & Leland Architects.

READING ROOM—BEVERLY FARMS LIBRARY, BEVERLY FARMS, MASS.
Loring & Leland, Architects.

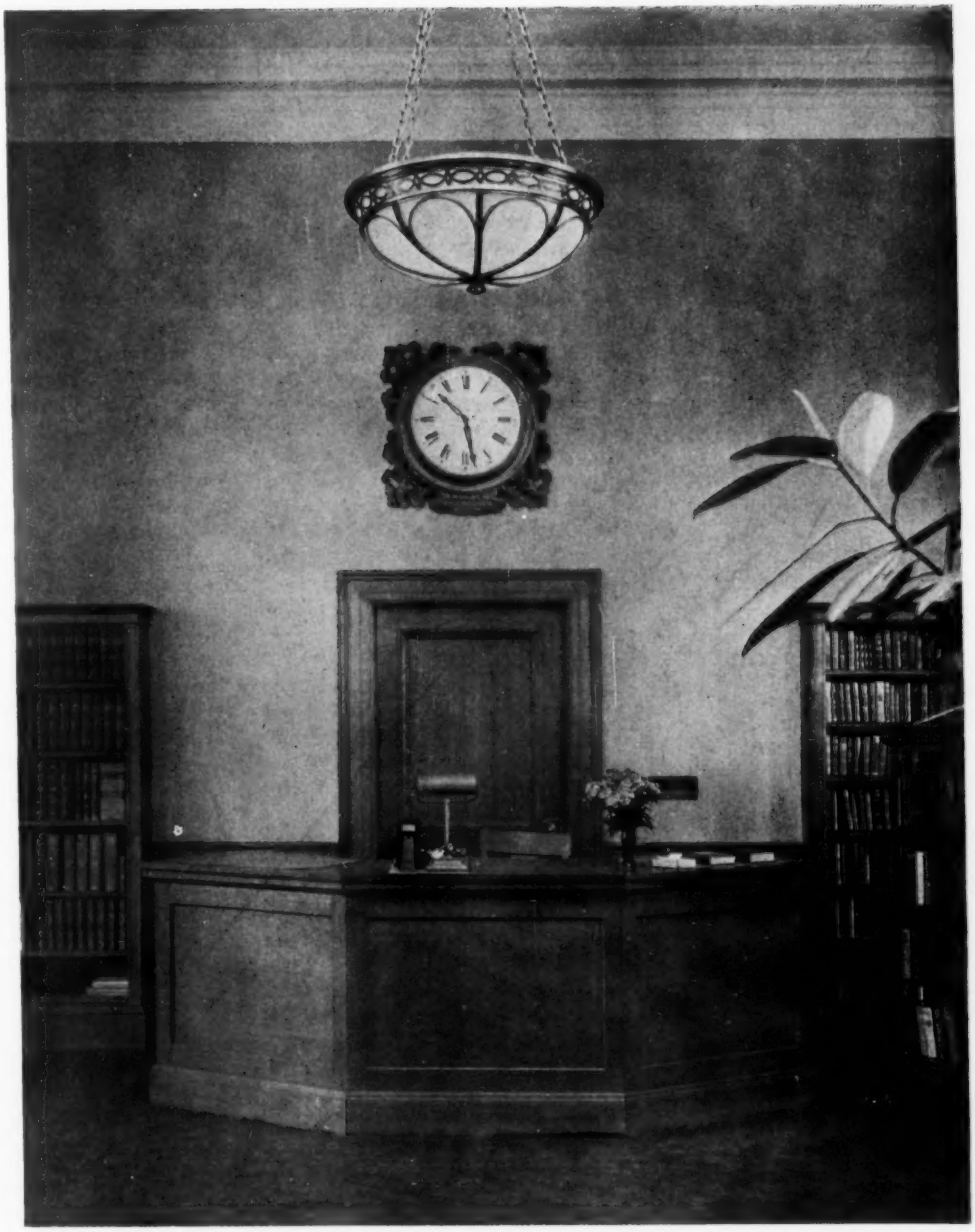
special finish of the oak woodwork. The latter is treated with a preparation which lowers it slightly in tone and gives it a mellow quality exceedingly agreeable to the eye. To correspond with this scheme, the lighting fixtures are of a silver finish. This color problem had to be given special attention by the architects, for, as suggested above, the library, while given perhaps greater use during the summer, also had to serve the permanent residents of the town. This meant the development of a scheme which, while remaining becomingly cool in the summer, would not become icy in the winter through lack of sufficient body.

Aside from the propriety of the color, however, the detail of the wood finish has been well and conservatively handled. The interior finish of both the entrance and the Palladian window is good in proportion as well as in detail. The furnishings are simple also, but in accord with the architectural treatment. In connection with this, attention should be called to an interesting utilitarian device, by which the edges of the book shelves are so profiled that they serve as a continuous slide rack for cards indicating the contents of the shelves, thus avoiding the necessity of expensive metal holders. Another device worthy of imitation is in the arrangement of the grilles under the windows which screen the radiators of the heating system. Cold air is admitted through a grille in the baseboard, heated by contact with the radiator and allowed to escape through another grille in the sill. So far this is commonplace; but, instead of being horizontal, the sills are sloped inward at an angle of some twenty-five degrees. This sends the heated air away from the wall by means of a reflector on the inside and prevents both the soiling of the shades by deposit of dust and the stoppage of air circulation by the placing of books and wraps upon the sill.

A simple moulded cornice makes the transition between the walls and ceiling, the centre of which is broken by a circular skylight with an excellent arrangement of radial tracery. This adds not a little to the lighting of the room and re-



DETAIL OF CLOCK IN READING ROOM—BEVERLY FARMS LIBRARY, BEVERLY FARMS, MASS. LORING & LELAND, ARCHITECTS.



DESK AND CLOCK IN READING ROOM—BEVERLY FARMS LIBRARY, BEVERLY FARMS, MASS. LORING & LELAND, ARCHITECTS.

MEMORIAL GATE—BEVERLY FARMS
LIBRARY, BEVERLY FARMS, MASS.
LORING & LELAND, ARCHITECTS.

lieves the central portion from the gloom which would otherwise result from the lack of direct wall fenestration at this point. As it is, the lighting is excellent, both on account of the ample window space and the light tones of the walls and wood finish. Artificial illumination is given by six direct-indirect electroliers suspended from the ceiling and by individual table lamps. The design of these fixtures is excellent and makes free use of distinctively Colonial patterns, as may be seen in the accompanying illustration.

Behind the attendant's desk and above the door leading to the working portion a special memorial clock has been placed. The body of the clock could not be sunk in the thickness of the wall, and the problem of architecturally tying this "pill box" form to the wall surface had to be faced. The result is a credit to the ingenuity and good taste of the designer. A series of mouldings takes in about half the depth of the clock. From there on the circular form is run out into a square and back to the plane of the wall by a frieze in deep relief of "Grinling Gibbons" carving, which successfully solves the problem. A reduction of the full size drawing of this clock accompanies this article, and an idea of its relation to the wall surface can be obtained from the illustration.

The door below leads onto a short balcony, open to the stack well on the right and giving access to the librarian's room, women's toilet, etc., on the left. The mezzanine above contains a room intended for special collections of various natures and contains Lowell's desk and other memorials. From the librarian's room a small window opens into the reading room, giving the librarian extra control without leaving her private office. The two tiers of metal stacks, to which will eventually be added a third, are built up from the basement floor and give ample space for future growth in the collection.

At the basement level is a receiving room with direct access from the outside, the men's toilet and a closet with sink for the caretaker. A few steps below this level a small door leads to the lecture hall, to which public admittance is gained by the area entrance mentioned above. The hall can accommodate about 100 to 150 seats, and contains a fair-sized stage as well as a small vestibule at the entrance. Behind the stage there is a good space for storage or other purposes (at present used by the local Red Cross), access to which is obtained through a door on each side of the stage or directly from the receiving room.

The size of the hall was, of course, rendered possible only because an individual heating plant was not needed, all the heat being drawn through an underground duct from the fire-engine house just on the edge of the lot at the rear. The illumination from the six windows, owing to their position half below grade, is somewhat scant in the daytime, but, as the hall is generally used for affairs in the evening, this is of small account.

One of the striking features of this building is the efficient manner in which every available bit of space has been utilized, which is a source of much satisfaction to those in charge.

The lot upon which the building stands is some 165 feet by 235, of which the building occupies approximately 9,000 square feet. Part of the land was originally given for a public playground, and it is intended eventually to lay it out for that purpose, thus affording the building a better setting than is now given. War economy having postponed the carrying out of the planting, the setting of the structure is not yet satisfactory.

An entertaining view of the little building is obtained from Hale street, through a memorial gateway of wrought iron, showing the upper part of the entrance to the lecture hall and its relation to the window above. This gateway designed by the architects is much more fortunate in conception than the lamp standards flanking the entrance steps. The latter seem rather out of scale and detract from the dignity of the order behind.

By and large the particular problem seems to have been solved with considerable success both from the practical and artistic standpoints. The building was completed within the appropriation of $30,000, a not overlarge amount for a structure of such finish.

LATROBE'S DESIGNS FOR THE CATHEDRAL OF BALTIMORE

BY FISKE KIMBALL

Part I

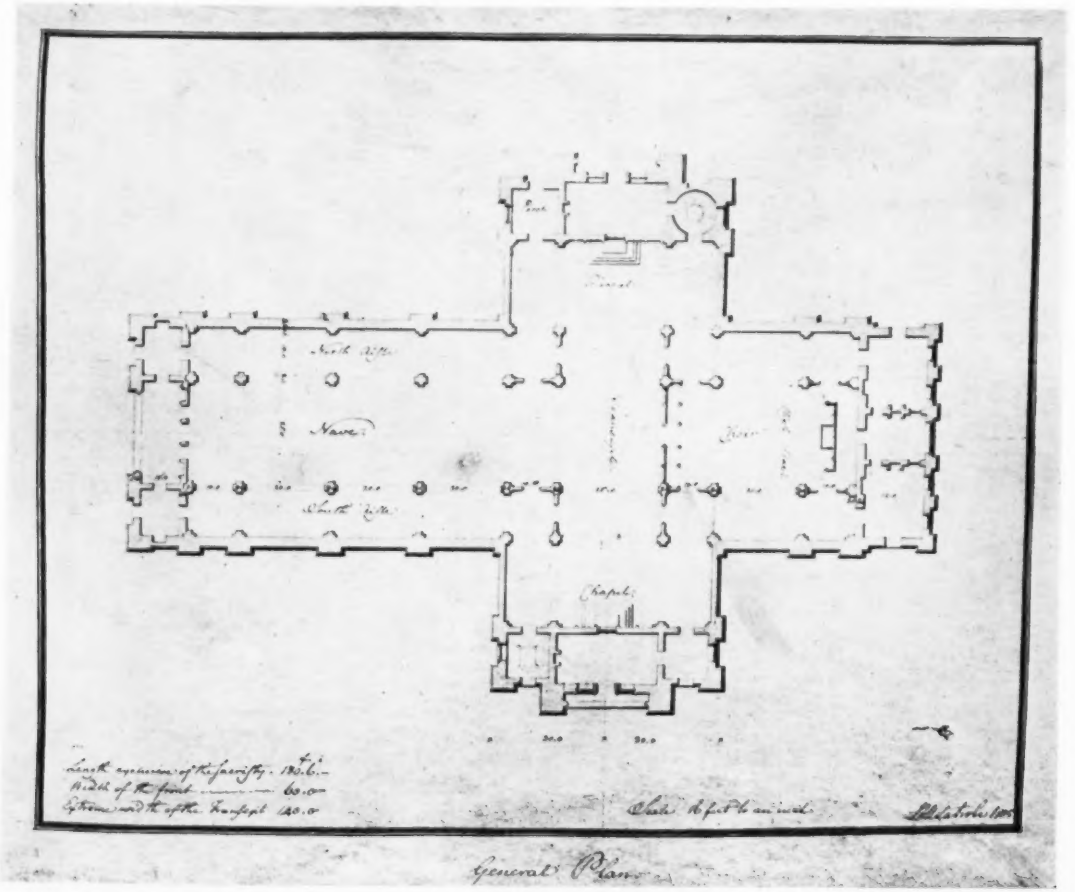
WHEN Bishop John Carroll undertook to build a cathedral for the Catholic diocese of the United States the country afforded no model for such an edifice. The See of Baltimore, erected in 1789, coeval with the establishment of the federal constitution, was the first religious jurisdiction in America having a national scope. Pius VI wrote, in the Bull which created it and made Carroll bishop: "We commission the said bishop-elect to erect a church in the said city of Baltimore in the form of a Cathedral, inasmuch as the times and circumstances may allow." The national character and the ambitions of the church were in striking contrast with its actual condition and means. St. Peter's church in Baltimore, which became Carroll's pro-cathedral, was but an aggregation of small buildings of domestic character, dictated by the pre-Revolutionary laws against holding Catholic worship except in private houses. Poor as this building was, it was then by far the most elaborate Catholic house of worship in the United States, with the possible exception of St. Mary's in Philadelphia.

In the churches of the dominant Protestant sects also there was little which could furnish inspiration for the design of a cathedral. The Puritanism of the New England colonies had proudly renounced every appeal to the senses, and worshipped in halls of barn-like asceticism, such as the Old South in Boston.

The Anglican church of the day, itself strongly Protestant, had little elaborate ritual or diocesan coherence. Its best churches, the best of the colonial period—St. Philip's and St. Michael's in Charleston, Christ Church in Philadelphia, King's Chapel in Boston, and St. Paul's in New York—were modeled on the London parish churches of Gibbs. They had indeed a basilican nave, but no development of chancel or transepts, and nothing in their external aspect suggestive of more than a parochial significance. The nave with a single western tower had always been indissolubly associated in England with the parish church. Classical details and a portico did nothing to shake this association. The accepted Colonial scheme, taken over bodily from Protestantism, had to suffice for Bulfinch's Church of the Holy Cross in Boston (1800-03), but would never do for a cathedral for the Catholicism of a whole nation.

Even foreign cathedrals, in reality, could offer less direct inspiration than one might think. The great period of cathedral building had been the Middle Ages; the cathedrals of the mother countries were Gothic, a style little known to the Americans of 1800. St. Peter's and St. Paul's, the outstanding examples of cathedrals in Renaissance forms, were on such a vast scale as to preclude imitation, and they were already attacked by the adherents of classical purism. The classicists, however, had had no cathedrals to build. Their nearest approach to one was Soufflot's church of St. Geneviève, the composition of which well fitted it for a national Pantheon. In truth the building of cathedrals had stopped in the old cities of Europe, and the one now to be built on the frontier of Christianity and civilization presented a new problem.

To cope with the problem there was in Carroll, a man of energy and tact, having wide European observation and eagerness to secure the best professional advice available. An American of prominent family, he had studied and taught for twenty years in the Jesuit schools and colleges of Flanders, and had toured Europe, England, and Canada. His



PLAN OF LATROBE'S
GOTHIC DESIGN (I).

helpers, although loyal, were lacking in ideals and experience. Building committee and builders alike were unprepared for the task of erecting a building of the very character of which they had scarcely a conception. With the best intentions they could not succeed without finding an architect of skill and knowledge transcending the narrow experience and book-learning of the best post-Colonial designers.

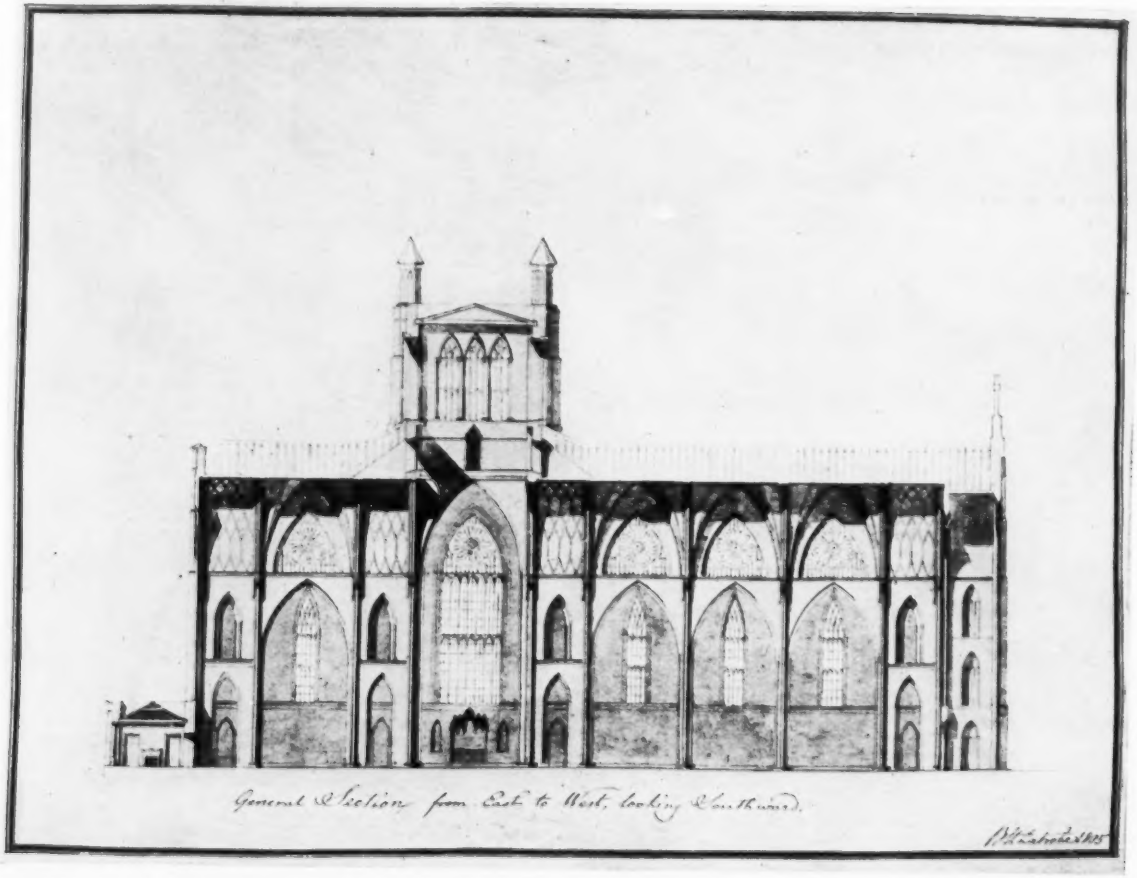
Although much of the correspondence relating to the design of the building has been published as part of the *Cathedral Records,* the designs themselves have hitherto escaped search. The collection of Mr. F. C. Latrobe of Baltimore, however, proves to include many drawings of the cathedral quite equal in interest to the executed work. Of the seven successive designs which were prepared by his ancestor, the architect, he has drawings representing four, from which, and other evidences, the provisions of the intervening designs may also be deduced. It thus becomes possible for the first time to understand the architectural history of the cathedral, and to appreciate more fully its extreme importance in the history of American architecture.

The first attempt to produce a design for the cathedral was apparently a volunteer one. Dr. William Thornton, who was a friend of the Carroll family, gave the Bishop a sketch, now, unfortunately, not to be found in the cathedral archives or in the various collections of Thornton drawings. This design, like all of Thornton's, did not fail to recognize the importance of the edifice; but it seems to have had difficulties, like Thornton's plan for the Capitol, arising from the author's lack of fundamental training in coördinating the details of a complex project. Bishop Carroll was evidently not wholly satisfied, for he had it submitted to Latrobe for an opinion. To us such a submission might seem contrary to the ethics of the profession, but as Latrobe was ignorant of the authorship of the design and made it a rule to charge nothing for any services to religious or educational bodies, it may be pardoned. The design called for some fifty-four Corinthian columns thirty feet high, with a "tower or dome" resting on certain of these without either piers or relieving arches. Latrobe's criticism, from which we obtain the meagre knowledge we have of it, was that it was too expensive, and incapable of erection in stone for constructive reasons.

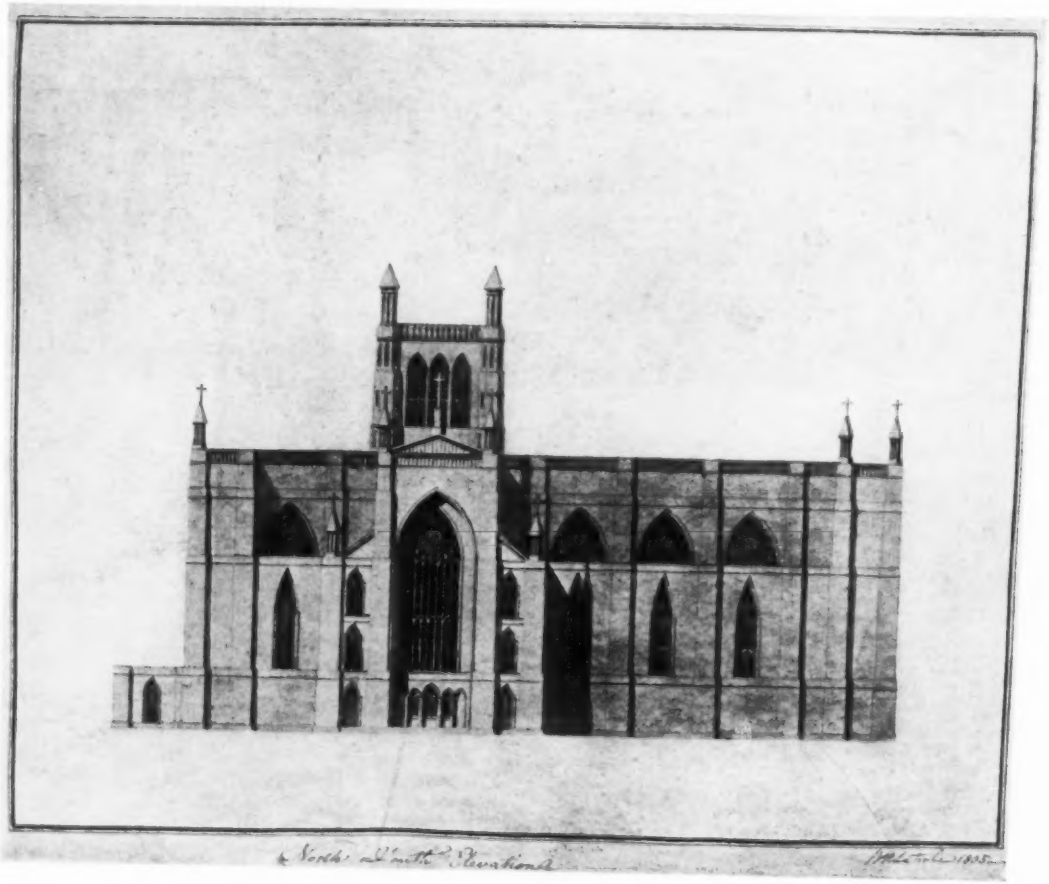
Latrobe, who was now invited to submit a design, and who offered his services freely, was far better equipped to solve the difficult problem in hand. The professional pupil of the elder Cockerell and of Smeaton, and himself an architect who had been honored with offers of the highest posts in the gift of England and America, he had the artistic ideals and the practical experience of both hemispheres. He had, moreover, the gift of keen analysis of a program, which was here urgently required.

On April 16, 1805, he submitted two designs, "'the one in Gothic, the other in Roman style." Both conformed in plan to a report by which Latrobe hoped to educate the building committee as to the requirements for a cathedral. In this he laid down as axiomatic a Latin cross form with side aisles and a large development of choir and transepts. Regarding the question of style he writes: "The veneration which the Gothic cathedrals generally excite by their peculiar style, by the associations belonging particularly to that style, and by the real grandeur and beauty which it possesses, has induced me to propose the Gothic style of building in the first design submitted to you. . . . I submit the choice to you entirely, having myself an equal desire to see the first or the second erected, my habits rather inclining me to the latter, while my reasonings prefer the first."

A clear-cut choice of style, such as Latrobe offered, was itself a new thing on this side of the Atlantic. There had been, indeed, many crude survivals of traditional Gothic building in the Colonies during the seventeenth century and even in certain churches of the eighteenth century. When Trinity Church in New York, which was one of these, was first rebuilt after its destruction in the Revolution, a supposedly Gothic style had been retained, although "im-

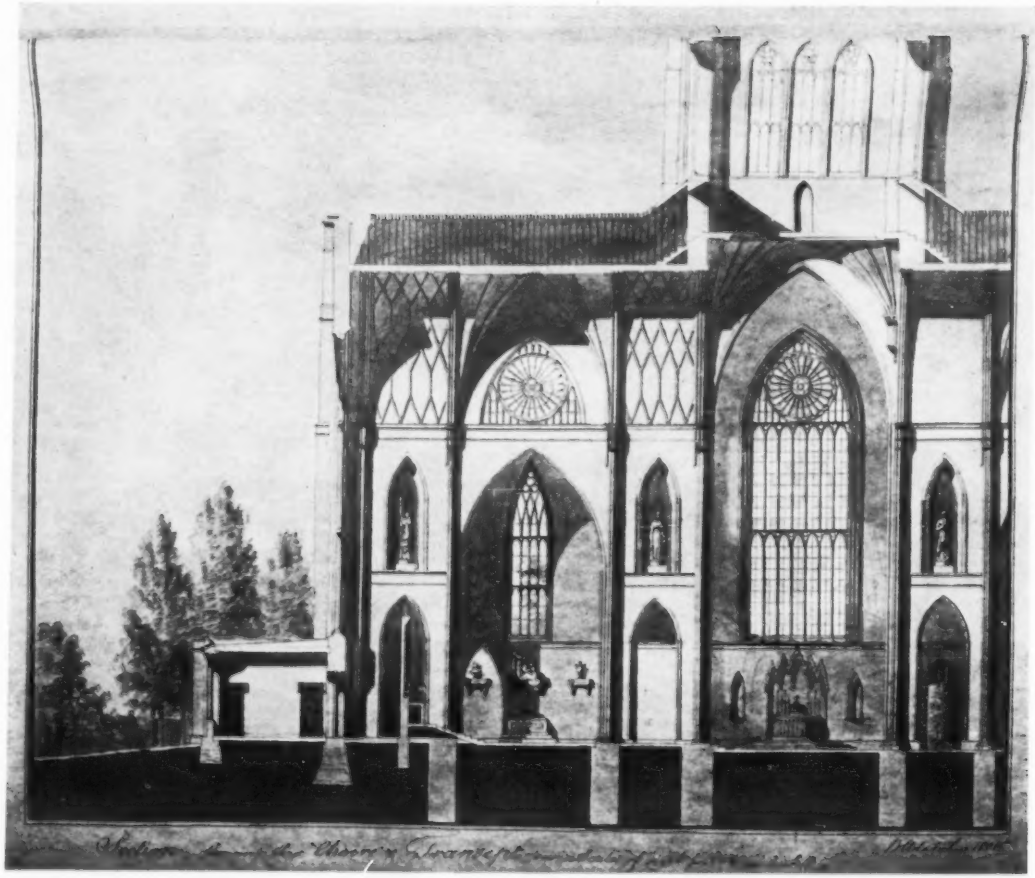


SECTION OF LATROBE'S GOTHIC DESIGN (I).

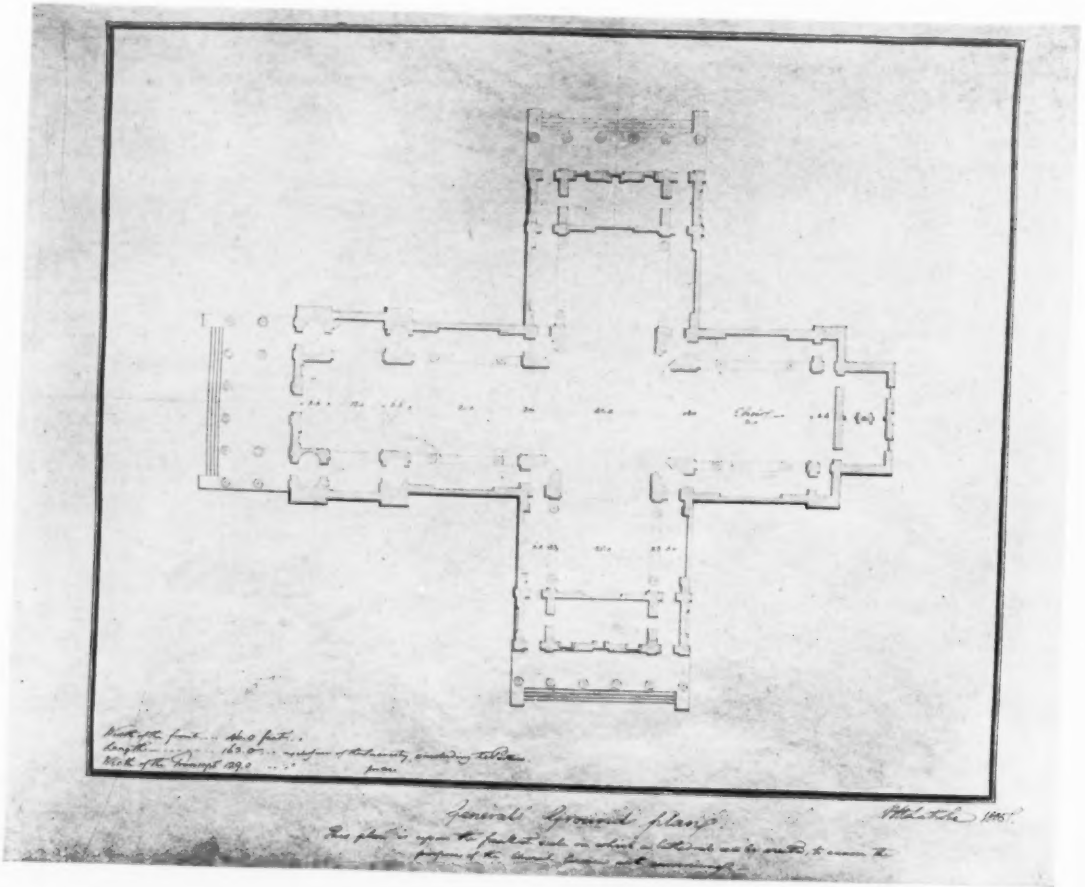


NORTH FLANK OF LATROBE'S GOTHIC DESIGN (I).

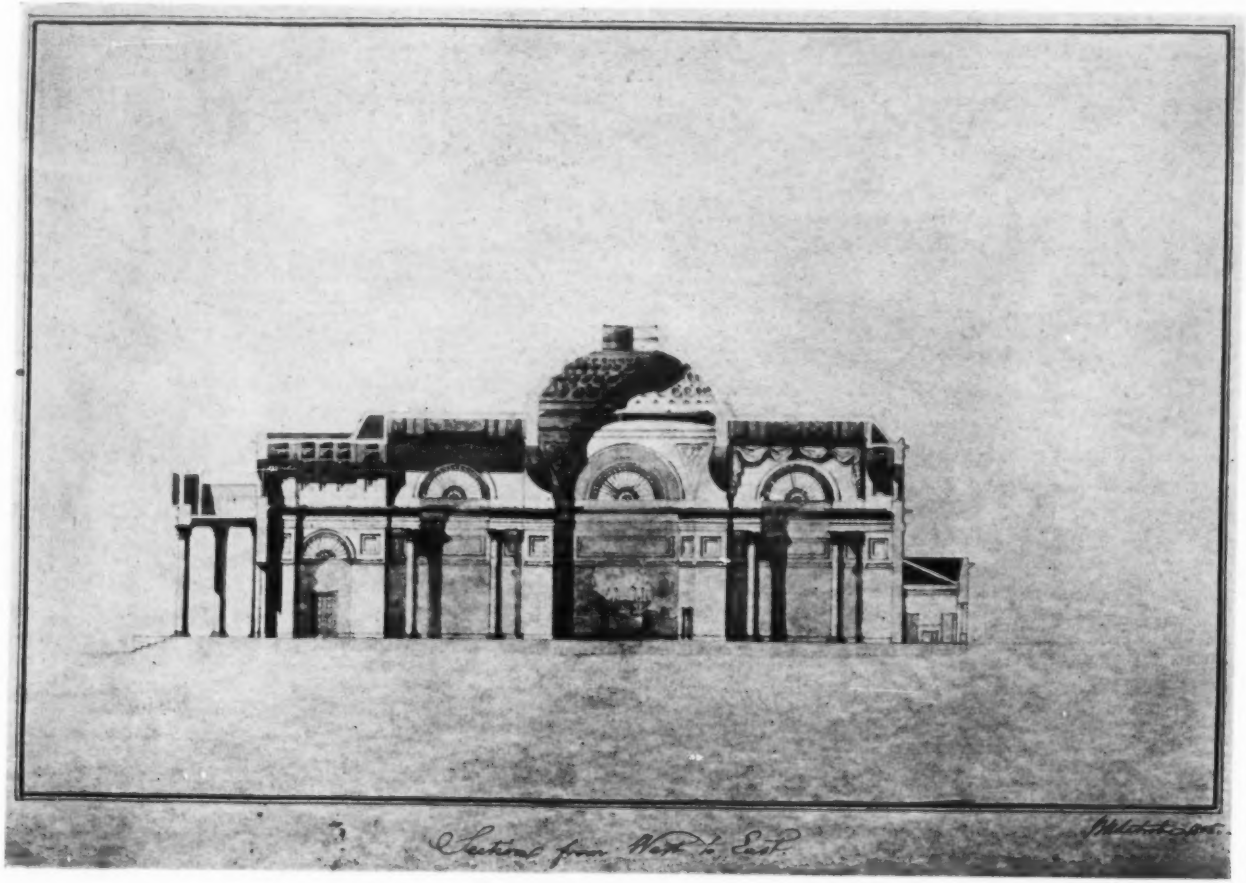
WEST FRONT OF LATROBE'S GOTHIC DESIGN (I).



INTERIOR OF LATROBE'S GOTHIC DESIGN (I).



PLAN OF LATROBE'S
FIRST ROMAN DESIGN (II).



SECTION OF LATROBE'S
FIRST ROMAN DESIGN (II).

SOUTH FLANK OF LATROBE'S
FIRST ROMAN DESIGN (II).

proved by rules and proportions" after the manner of Batty Langley. Latrobe, however, brought for the first time a real knowledge of Gothic in its great period, which had been acquired by the pioneers of the Gothic revival. In England, the home of this movement, experiments in building with this style had been progressing for fifty years with increasing success, and results already by no means contemptible. There the principal Gothic designs had been for country seats, which Latrobe had emulated in his design for Sedgeley near Philadelphia. No cathedral in revived Gothic forms had yet been attempted in England, and outside of England no Gothic church had yet been projected in modern times.

Latrobe's Gothic design (I) for the Cathedral, although still lacking in the sympathetic understanding of detail which came first with Ruskin fifty years later, is not unacceptable judged even by present standards of knowledge. It had a clerestoried nave and aisles vaulted throughout in masonry, with grouped vaulting shafts carried to the ground, and vigorous wall buttresses. The difficulty produced at the crossing by the narrowness of the aisles, treated merely as passages, was overcome by a rhythmical bay motive carried into the choir and transepts. The west front of the nave was given a deep arched opening like one of the arches of Peterborough, with the aisle fronts carried up to the same height; the transepts had a shallower great arch, but with the silhouette of nave and aisles revealed. A low central lantern dominated and unified the exterior, which could not have failed to be very impressive, with its cliff-like walls and deep shadows.

The alternative "Roman" design (II) is equally advanced in relation to the tendencies of the time. It is on the general scheme of the Pantheon in Paris, but is made even more severely classical by the substitution of a Roman saucer dome for the tall Renaissance dome of its prototype. The plan involves an ingenious avoidance of the weaknesses of Soufflot's, in that the angle piers are strengthened, and the *ports à faux* of Soufflot's dome are lacking. The narrow aisles which flank both nave and transept are carried through the piers diagonally, and the adjustment of the Latin cross within an essentially Greek cross scheme is managed with great facility. The lunettes which light the interior are not masked as in the Pantheon or St. Paul's, but expressed on the exterior with a frankness which is characteristic of Latrobe's structural purism. The main cornice outside is placed at the height of the impost within, thus producing an attic.

Although Latrobe later expressed his preference for an order the full height of the building, which had distinguished Soufflot's design, he felt at first that he must adopt "the old and not very elegant idea of an attic" to decrease the scale and expense. Despite this concession to academic formulae the design is notable for its grandiose and monumental classical character. On either plan the building was sure to be noble and appropriate.

Coucy-Le-Château
A Victim of the War

By Richard F. Bach

RECENT accounts of the strategic retirement of the Germans to the now historic Hindenburg line—in the course of which for alleged military reasons ruthless destruction was visited upon an untold number of buildings of varying antiquity and present educational value—granted only casual notice to the intentional razing of Coucy-le-Château, the foremost monument of European military architecture of the so-called age of chivalry, up to the moment that it suddenly rose as a cloud before the eyes of the advancing French army.

Coucy represented one of the most stupendous building undertakings of its time, both as to actual size and as to military strength. It was a typical feudal castle, originally built by Enguerrand III in the thirteenth century, and undertaken as a complete project at the time of its erection and not, as is so often the case with medieval buildings, the result of many scores of years of slow accretions at the hands of successive owners. It was later bought by Louis d'Orléans, builder of that other splendid structure, Pierrefonds; passed to the French crown in 1498, and was dismantled by order of Louis XIVth's crafty Italian minister, Mazarin, in 1652.

From the standpoint of defense the position chosen for Coucy was ideal. A total area of some ten thousand square yards, favored by very steep approaches, was chosen at one end of a plateau near the city of Noyon. A considerable section of the area selected was given over to extensive buildings (see perspective, Fig. 1) not very strongly fortified, the purpose of which is not now known and of which only an occasional vault or column remained before the war; there was here, however, outside the heavy walls of the castle proper, a chapel of a date probably much earlier than the thirteenth century.

As in the case of all feudal castles, the main establishment was erected as a dependency of the donjon or keep, an immense masonry tower, amply provided with all needs of sustenance from well to cattle stalls, and catering to all human requirements from simple military protection to the customary dungeon for the quick elimination of undesirables. The donjon of Coucy gave upon the open plateau area between Noyon and the castle itself (see plan, Figs. 2 and 3). It was flanked by two smaller angle towers connecting with the donjon by means of curtain walls, of which one was pierced by the only entrance reached by a bridge defended by three pairs of double towers and thrown across a moat which was itself over sixty feet in width. The entrance, which was heavily protected by portcullis, thick wooden iron-studded doors, drawbridge and other accessories, led to a residence building, of which the ground story was used as a barracks; through its centre ran a corridor, vaulted and provided with perforations above through which missiles might be dropped or lead or oil poured hot. The corridor debouched upon the open courtyard of the castle, while the four-story building of which it formed part connected with and used as a side wall the exterior eastern wall of the whole enclosure. Along this wall were constructed service buildings three stories in height, providing living quarters for help or for retainers. The northeast and northwest corners were again carried out in form of circular towers; while between them, in the most inaccessible position in the plan, were built the chief residential quarters, again vaulted in the lowest story as in the case of all the other structures thus far mentioned. Following around to the western side of the plan, we find the whole of the available exterior wall space used as part of an immense storage maga-

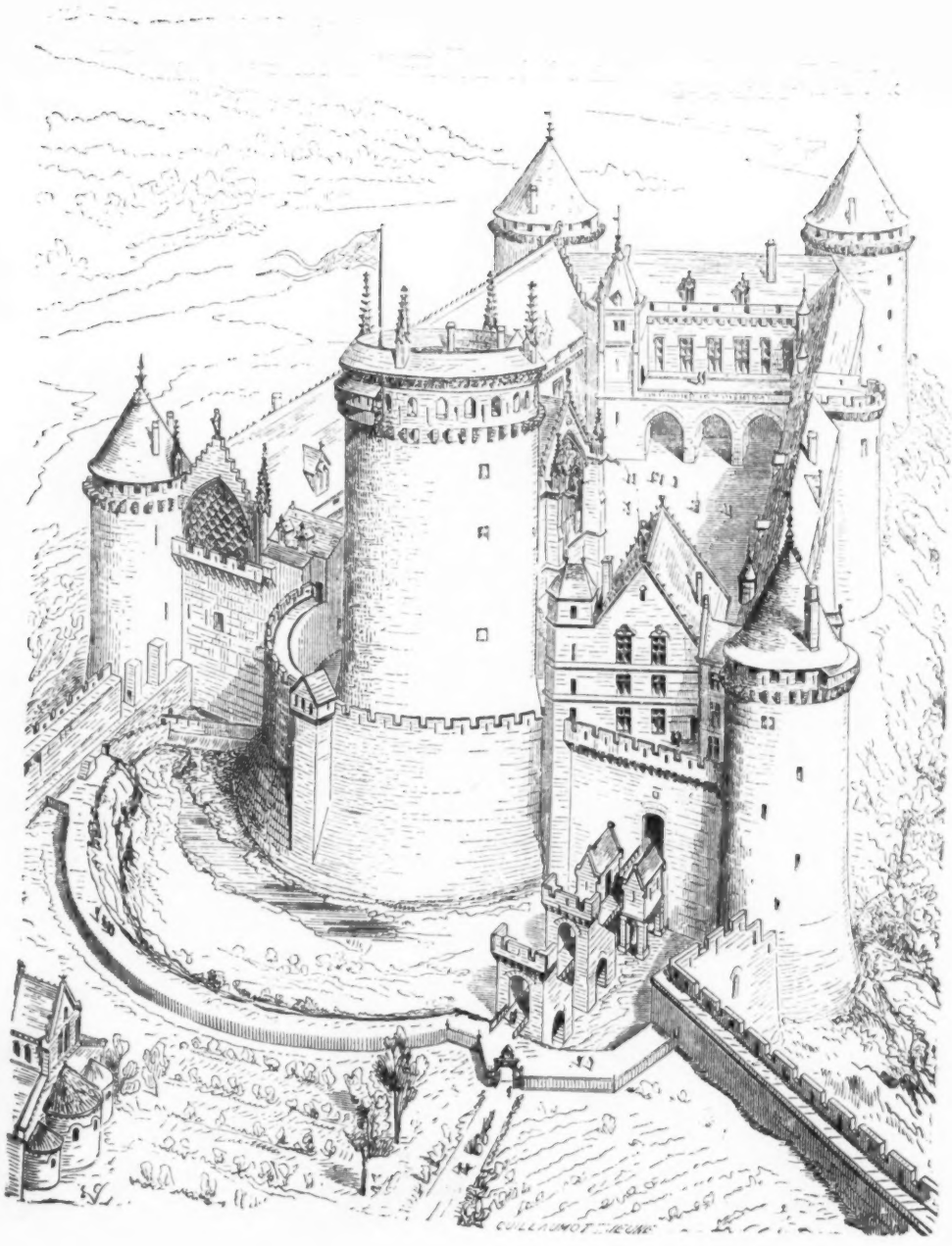


FIG. 1. COUCY-LE-CHÂTEAU. GENERAL PERSPECTIVE.

zine for every manner of material and food provided against an extended siege. Storage facilities were also accounted for in a cellar level beneath this enormous building; in fact, there were a number of such possibilities in the understructures of practically all portions of the plan, except the courtyard. Projecting from the inner side of the storage building was the castle chapel. Kitchens seem to have been arranged for in the space adjacent to the chapel, but separated by a small yard from it and the donjon which occupies the centre of the southern elevation. The four corner towers had an understructure of three stories—a sort of superposition of three constructed caves—and three more stories above ground level. Their height was slightly over one hundred and fifteen feet and their diameter about sixty feet. Beside these dimensions the donjon itself was a mammoth, measuring over two hundred and ten feet in height and over one hundred feet in diameter. Around the base of the donjon was built an additional walled enclosure, set at some distance from it and forming part of the general curtain wall. In one end of this enveloping arc a small postern, with the usual protection of heavy doors, ceiling perforations, etc., made possible an exit to the escarpment on the opposite side of the moat; while the base was penetrated throughout its curve by a passage contrived no doubt as a means of detecting mining operations, since it was constructed at the level of of the bottom of the moat. At this level also was discovered a spring of pure water which solved a most serious problem; the location of this essential was of greatest benefit to the inhabitants, since it was absolutely inaccessible, except through the entire defenses of the building or, to be sure, through treachery.

Properly to restore the buildings of Coucy the imagination must recall the character of the vaulting, the profuse painting of the vaults, the frequent use of trussed roofs and the carving of projecting members, the delicate carving of capitals and occasional window treatments, not to mention the general architectural excellence of the chapel itself. To crown the whole effect we have the general quality of picturesqueness due to site and, in addition, also to man's efforts to circumvent possible attack.

The donjon of Coucy will merit a more detailed description, for in the days of its early greatness the donjon was the proper residence of the feudal lord or seigneur. This giant structure was contrived in the form of an exact circle in plan, accessible from the courtyard of the castle only by means of a very narrow door and passageway with accessory protections of portcullis, etc., as usual, and set off entirely from all other parts of the general plan by means of a smaller encircling wall, as indicated above, between which and the tower itself lay a moat slightly over twenty-five feet in width and about sixteen feet beneath the sill of the narrow entrance. The usual drawbridge was thrown across the moat to connect with the open courtyard. From a narrow entry, or postern, a short corridor or passage leads through the wall of immense thickness—that is, one-fourth of the total diameter of the tower, or a matter of about twenty-five feet of masonry as measured above its slanting or battered base—and in the thickness of this wall were contrived toward the right a spiral stair tower, or rather stair well, which served all upper levels of the structure, and toward the left a short passage leading to conveniences, thus placing the latter entirely out of direct communication with the central open space for purposes of sanitation.

A well driven to a depth of one hundred and ten feet was located at the right immediately on entering the great vaulted room forming the ground story of the donjon, occupying one of twelve rectangular recesses in the thickness of the wall (see plan, Fig. 5), all of which are of equal size, excepting that occupied by the well and that required for the entrance. These twelve niches, oblong in plan, correspond to as many vaulting compartments, the strongly projecting ribs of the radial vault striking against an annular oculus above and forming a series of deep penetrations, in the full height of which the square-backed niches were carried up in a double tier, the up-

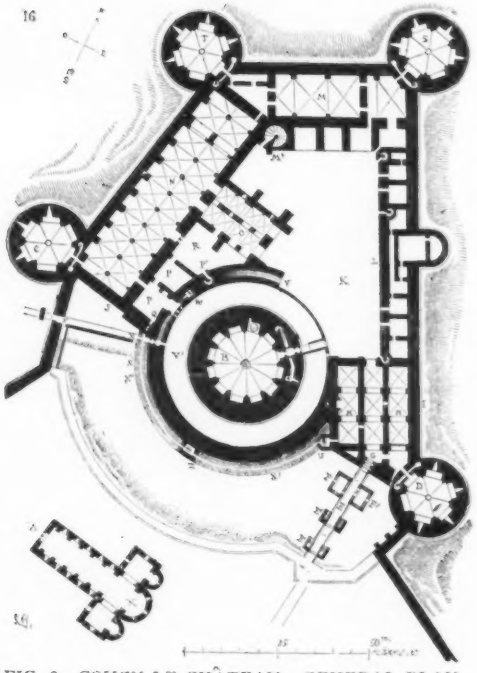


FIG. 2. COUCY-LE-CHÂTEAU. GENERAL PLAN, MAIN LEVEL.

per level being formed by the level of a cornice above a series of pointed arches. The great vaulting ribs spring from small shafts with finely cut capitals set against the wall spurs projecting between the niches just mentioned. The only source of light is found in two small square windows set very high.

In the second story (see plan, Fig. 6) we have practically a duplicate of the first. There is provision for meagre lighting in this case, however, in the form of three small windows. There are again twelve oblong niches, three occupied by narrowing passages leading to the windows, one giving upon a very narrow passage connecting with a small bridge thrown across to the enclosing curtain wall, a fourth giving access to the circular stairway, and a fifth occupied by a fireplace with chimney (see section, Fig. 4), the latter not by any means the customary thing at this stage in architectural history. The vaulting ribs in this case again strike against a circular opening in the crown, the purpose of such openings being to provide an easy means of carrying supplies from floor to floor, especially missiles to the roof, since a vertical hoist could easily be contrived to serve all three levels.

In the third story (see plan, Fig. 7) interior we have a splendid example of medieval design, a conception of almost terrible dignity and as good an illustration of the decorative treatment of distinctly military buildings as can anywhere be found in feudal times. The great hall, a twelve-sided polygon in plan, is vaulted radially, the ribs again springing from carved capitals set on slender shafts, the latter placed against deep piers disposed on the radii of the dodecagon of the plan, but each pier is pierced at the main floor level and also at the level of a gallery raised about ten feet above it. By this means large accommodations were afforded, and it has been estimated that no less than one thousand retainers could be grouped together in this hall and its galleries, so that all might hear simultaneously some general pronouncement as to law or mutual defense of the castle. At this level the wall has been decreased in thickness about two-thirds, and in the space thus

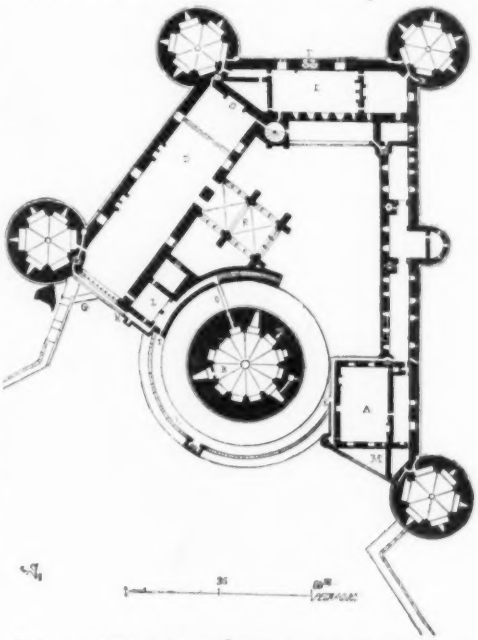


FIG. 3. COUCY-LE-CHÂTEAU. GENERAL PLAN, SECOND STORY LEVEL.

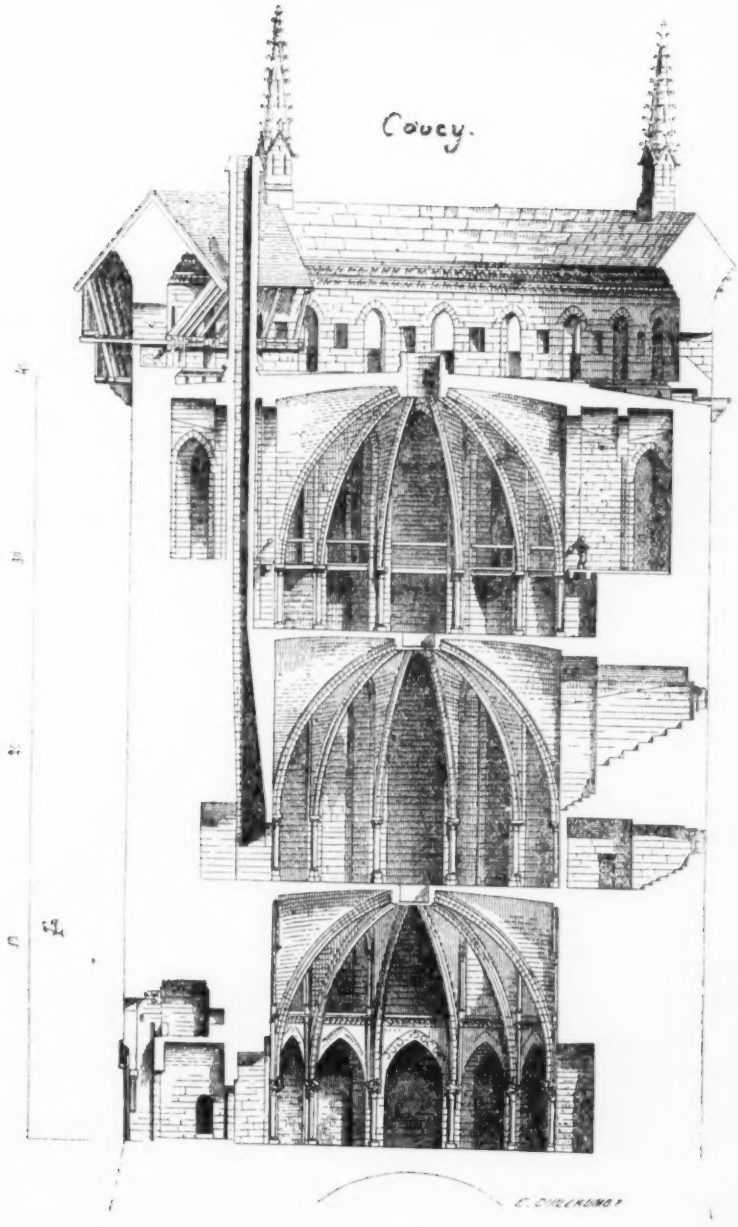


FIG 4. COUCY-LE-CHÂTEAU. SECTION OF DONJON OR KEEP.

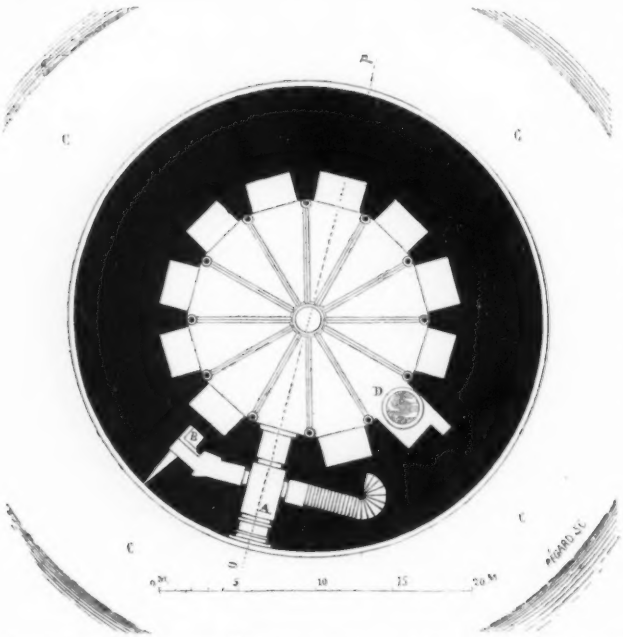


FIG. 5. COUCY-LE-CHÂTEAU. GROUND PLAN OF DONJON OR KEEP.

dows from without. By this means defenders placed in them could operate at freedom and without interference from the activity of those furnishing supplies and missiles on the roof area. On the exterior wall at the roof level were built a number of brackets in stone; these served as supports for an additional wooden gallery (see section, Fig. 4), which, projecting from the wall face, could command a full view of the base of the tower without exposing the defenders. Between the stone brackets supporting this wooden gallery were left a series of openings to assist in the construction of the gallery, as sockets for beams, and also to serve as convenient points from which to drop missiles.

gained deep recesses give additional floor area. Since the chief source of light was the central opening in the roof, but two windows were built into this story. The stair well was itself lighted by slit windows throughout its height.

The roof (see plan, Fig. 8) of the donjon served, as was the case in all similar constructions, as a sort of fighting top. The roof proper was lead covered and the wall of the tower was carried up to a considerable height beyond its level. This wall space was perforated by slit windows alternating with larger openings with pointed heads; although of the size of doors, these were filled in through half their thickness to such height as to make them appear as win-

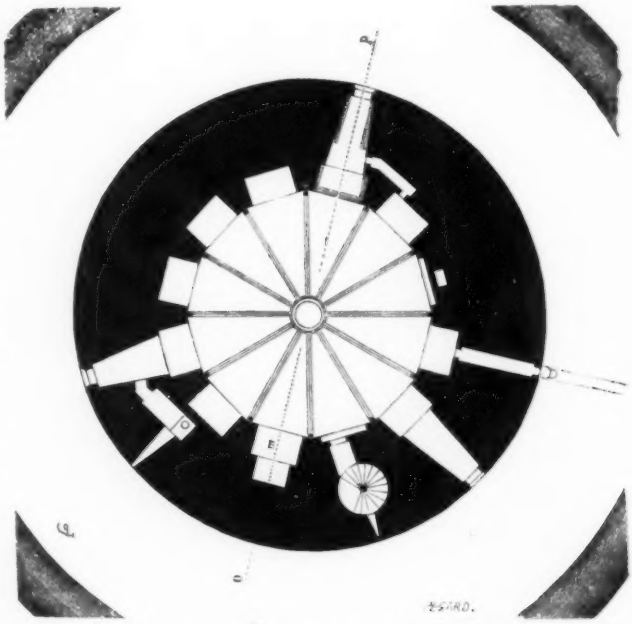


FIG. 6. COUCY-LE-CHÂTEAU. SECOND STORY PLAN OF DONJON OR KEEP.

The heavy wall or battlement terminated in a cornice, projecting both inward and outward, and covered with a gable roof. Four pinnacles, with finials and crockets, lent a gratifying decorative touch to the heavy exterior.

To visualize the effectiveness of the donjon in its pristine structural integrity, it will be necessary to restore also the interior decorations, carried out in fresco on a thin coat of plaster which covered masonry walls left quite rough in expectation of such covering and painting. We must also visualize the paintings of chivalric scenes to serve not only as reminders of the glory of the owner's crest, but also as a means of impregnating the minds of youths

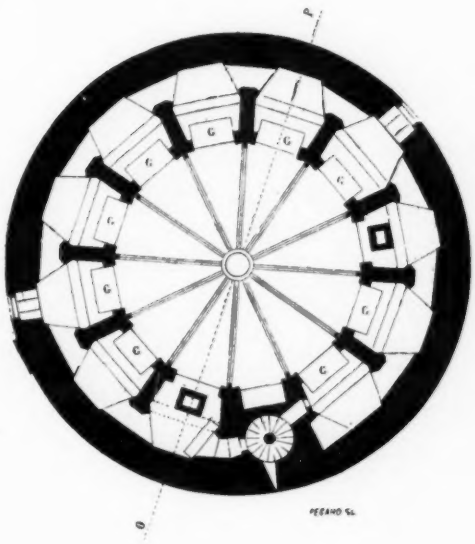


FIG. 7. COUCY-LE-CHATEAU. THIRD STORY PLAN OF DONJON OR KEEP.

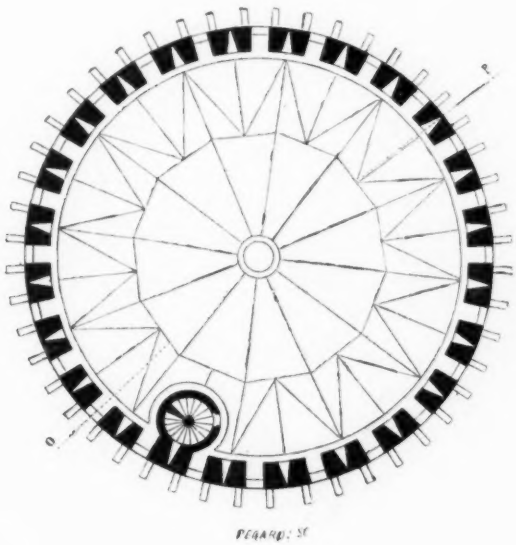
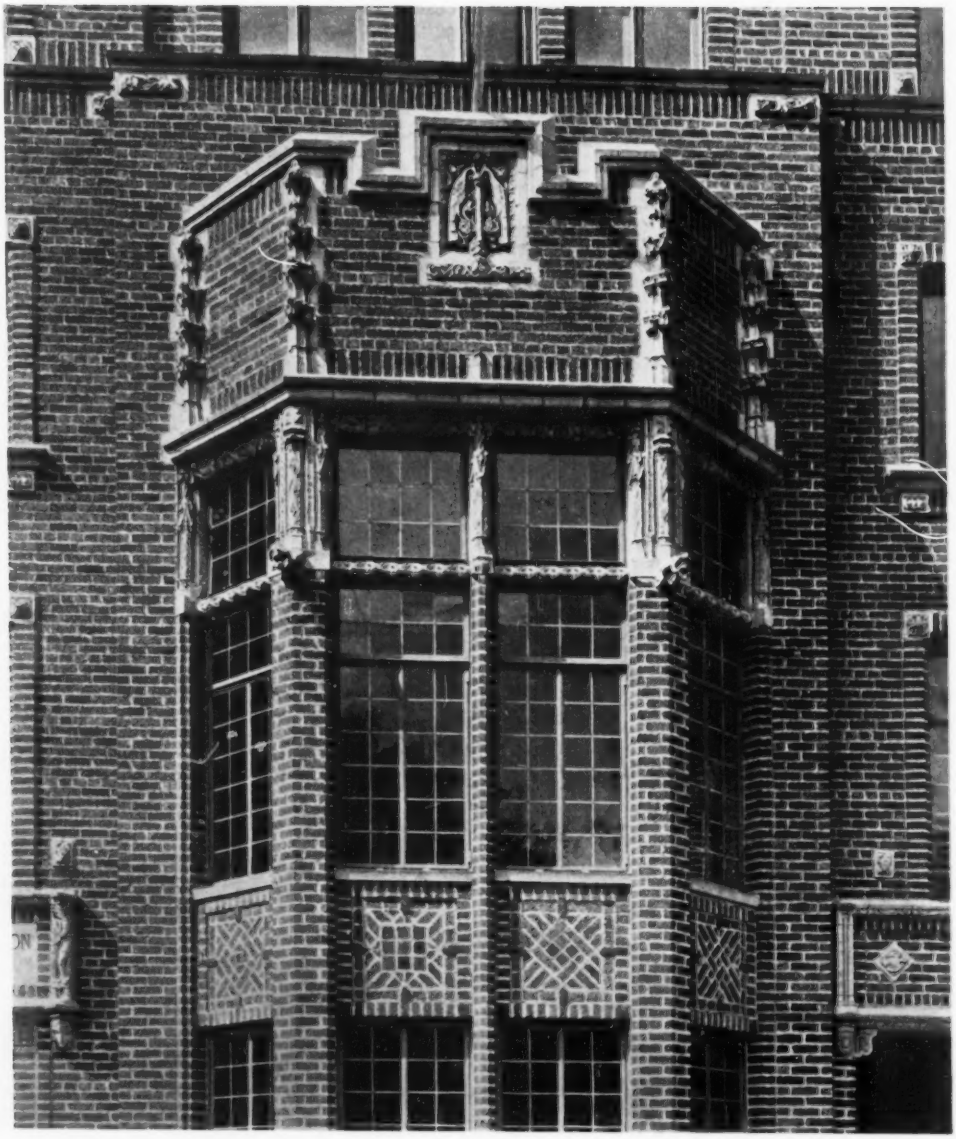


FIG. 8. COUCY-LE-CHÂTEAU. ROOF PLAN OF DONJON OR KEEP.

and squires with an adequate sense of the importance of certain military and other feudal virtues. Add to this the glint and rattle of armor and the fine color and movement of loose garments of women, and restore heavy hangings and crude oaken furniture, and we have but a very dim picture of such quality and grandeur as was not attained in any other castle in France. It is not at all difficult to understand the source of inspiration from which the Romanticist draws so continuously and with such gratifying results when we recall but a small fraction of the charm of Coucy.

Note: Illustrations in the foregoing are from Viollet le Duc's *Dictionnaire de l'Architecture*.



DETAIL OF BAY WINDOW—
OFFICE BUILDING OF PERKINS,
FELLOWS & HAMILTON, CHICAGO.

The NEW OFFICE BUILDING of PERKINS, FELLOWS & HAMILTON, Chicago

PLANS of a number of architects' offices have been published; but it is not often that a firm of architects is in a position to design an office building for its exclusive use on land of its own near the business centre of a great city. Tower Court is the name recently given to a short street, in the North Division of Chicago, which passes the west side of the now unused standpipe tower of the first water works built to supply the whole city. The tower was erected about 1855 and is preserved as a monument to the Chicago water system. The building of Perkins, Fellows & Hamilton, at 814 Tower Court, stands opposite the end of another short street about one hundred feet north of the tower. It can be seen from the Lake Shore Drive, which lies between the tower and the reconstructed pumping station still in use; and as its street number indicates, it is eight standard blocks from Madison street, the official east and west central street of Chicago, from which all street numbers north and south are regulated. Chicago avenue, next south of the building, is half a mile north of Madison street.

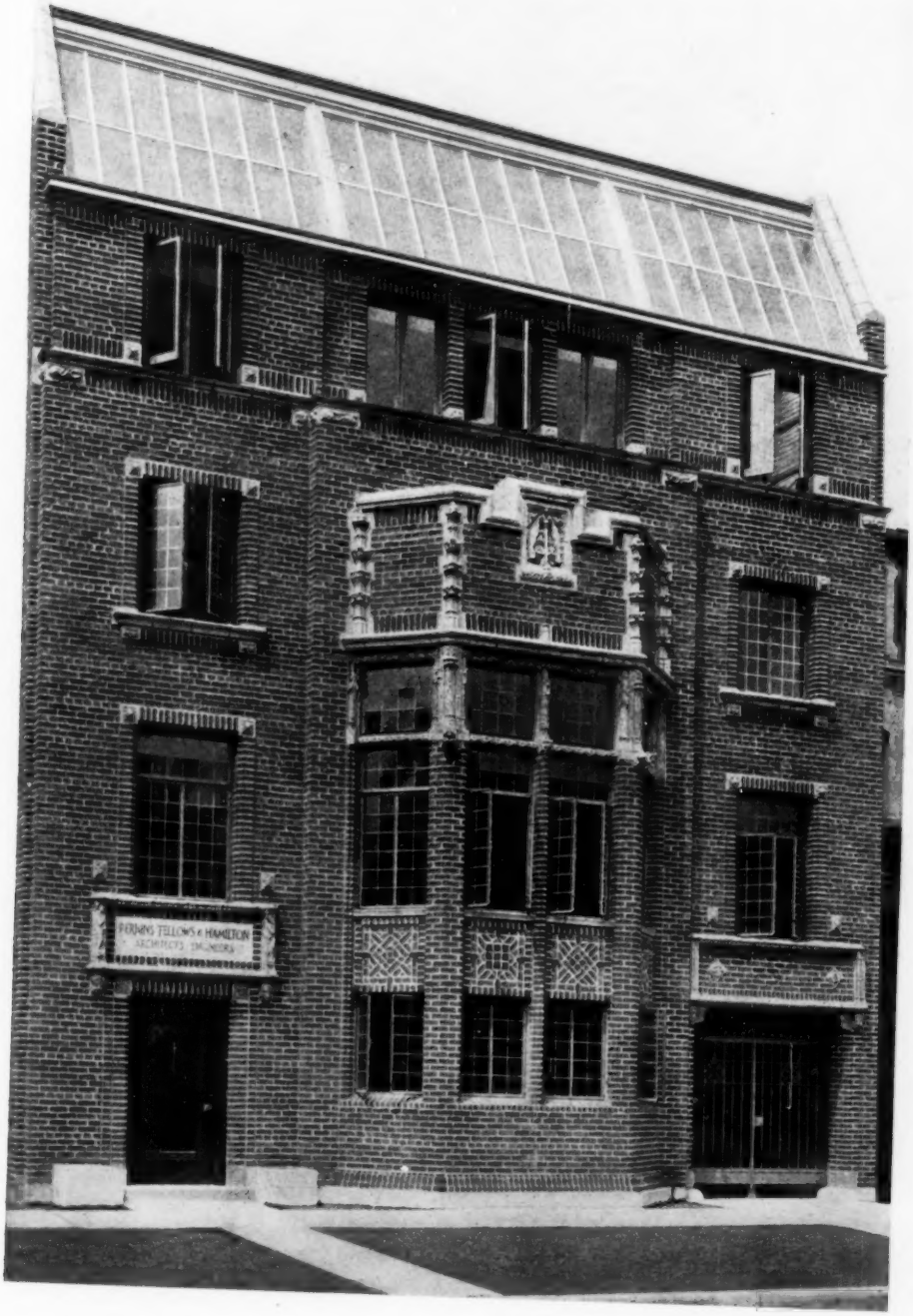
The neighborhood was once the best built residence district in Chicago, north of the centre; it is now gradually being taken up for buildings of a semi-public nature, and the fine old dwellings are disappearing.

The three members composing the firm are all noted for their artistic attainments; and while the sign over the door announces that they are engineers as well as architects, this announcement is to be understood as meaning that they are competent to do the necessary engineering work connected with the ordinary practice of architecture. They are licensed both as structural engineers and as architects under the laws of Illinois. The building is an illustration of the best engineering practice—it is fireproof and gives evidence of much original construction.

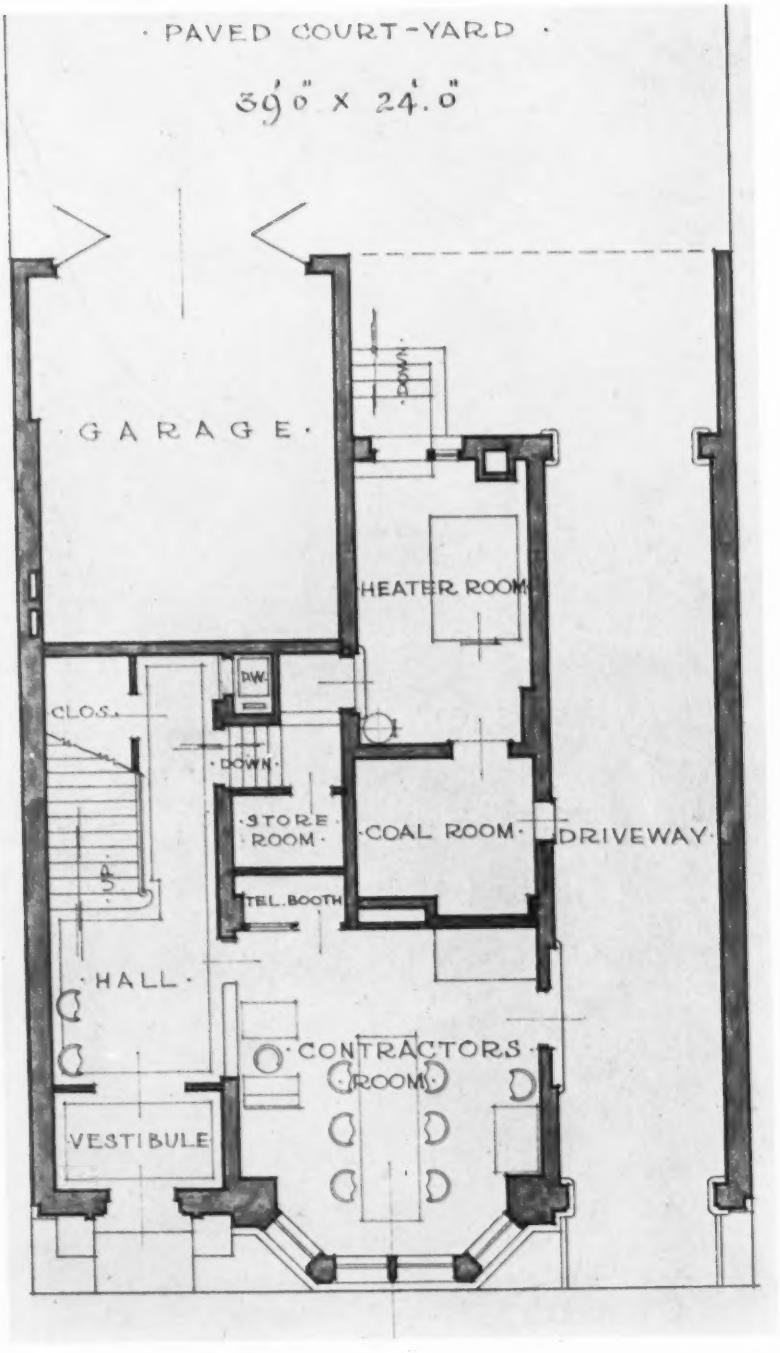
The recent work of the firm has shown a leaning toward the use of Gothic details, a leaning evident also in the present example, which, however, exhibits no direct copying of specific Gothic forms. The ornamental features were not wrought after carefully detailed drawings. On the contrary, they were rather suggested than designed by the architects; they were "controlled" very much as were the carvings of the medieval buildings of the thirteenth century. Everything on the front wall above the base water table and steps is terra cotta, without enamel or even smooth surface. Rough sketches were made by the architects indicating the general size, proportions and projections of the ornaments, and these were all modeled by Emil Zeitler, who had spent several years studying the medieval sculpture at Chartres and other famous works in Europe. Every piece in the front of the building is an original model as it came from the sculptor's hands. Incidentally, the panel over the fireplace is the plaster model made by Mr. Zeitler for a carved oak panel in a country house designed by the same architects. The model is surfaced with dull bronze and relieved with backgrounds of blue and red. It gives the artist's impressions, from memory, of traceries and panel ornaments seen abroad in old work.

The tendencies of the modern use of medieval Gothic are better shown in a building of this kind than in a church, the details of which are usually minutely copied. There is much work being done now in the Middle West which is not Gothic but which is clearly influenced by it. Such work may frequently be seen in the crowning members of apartment houses and manufacturing plants, where projecting cornices are objectionable for

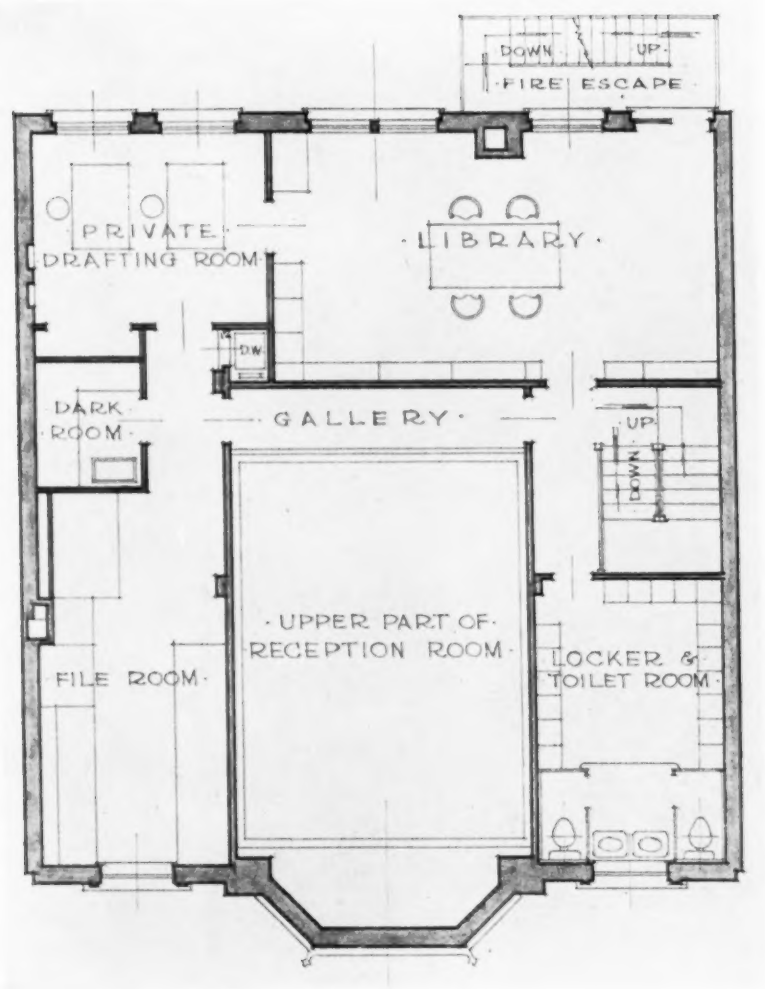
ENTRANCE—OFFICE BUILDING OF PERKINS, FELLOWS & HAMILTON, CHICAGO.



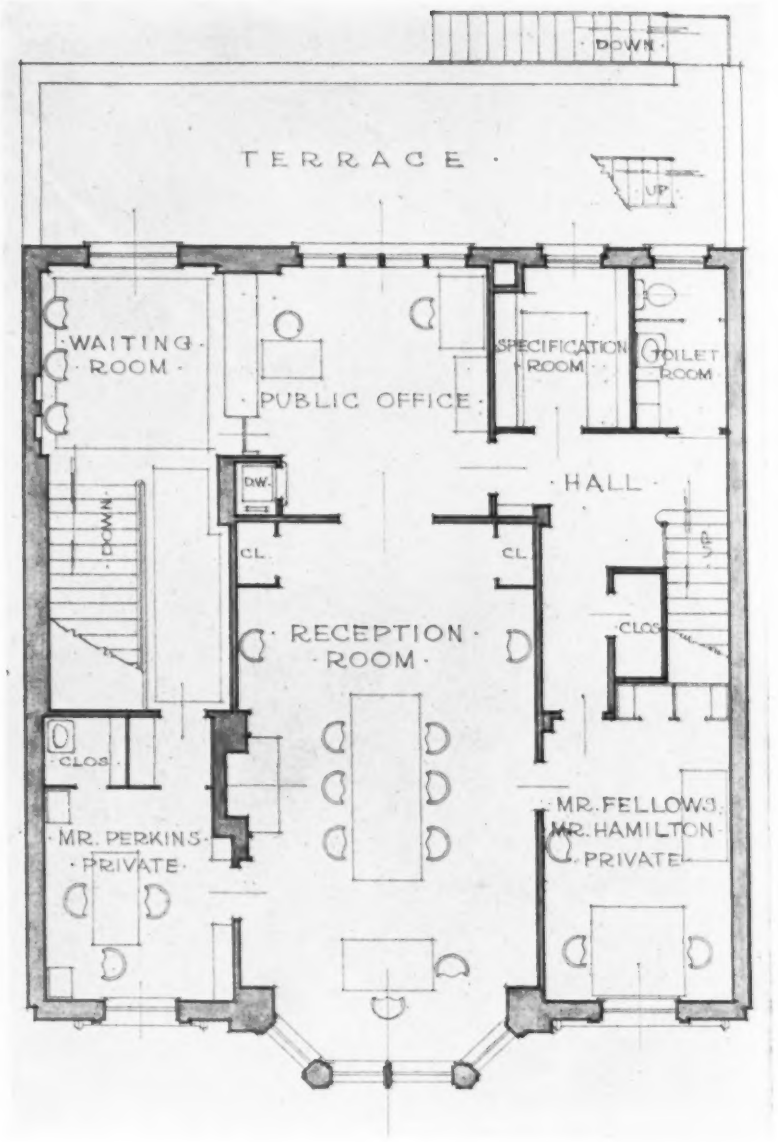
OFFICE BUILDING OF PERKINS, FELLOWS & HAMILTON, CHICAGO.



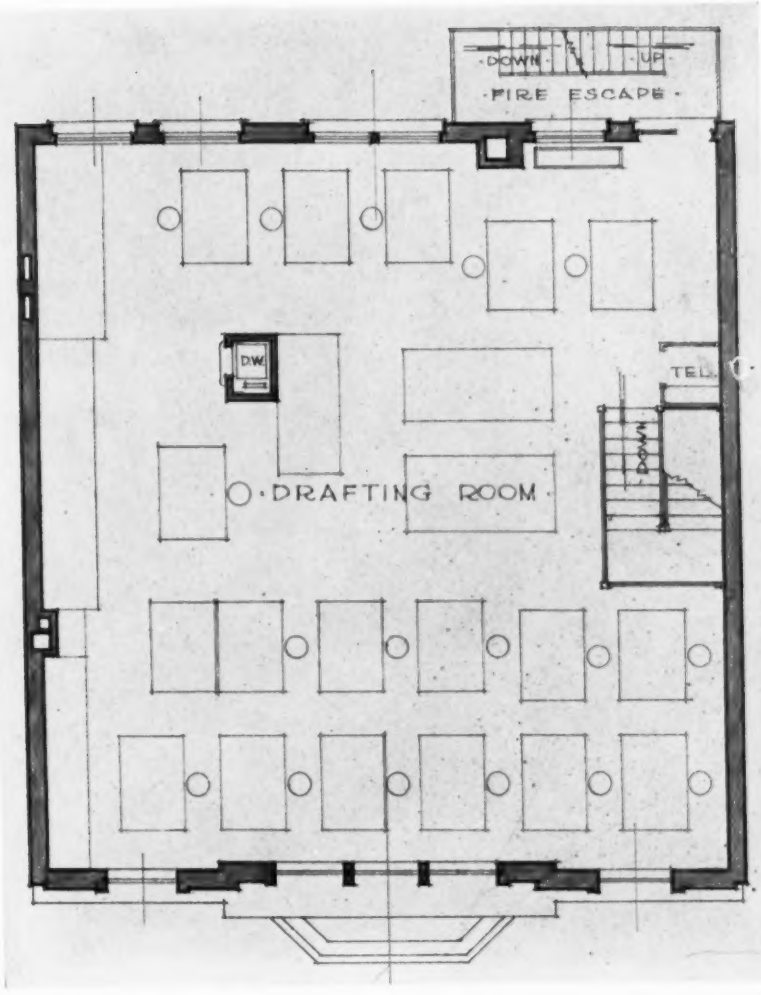
GROUND FLOOR PLAN (LOT 39 BY 80 FEET)—OFFICE BUILDING OF PERKINS, FELLOWS & HAMILTON, CHICAGO.



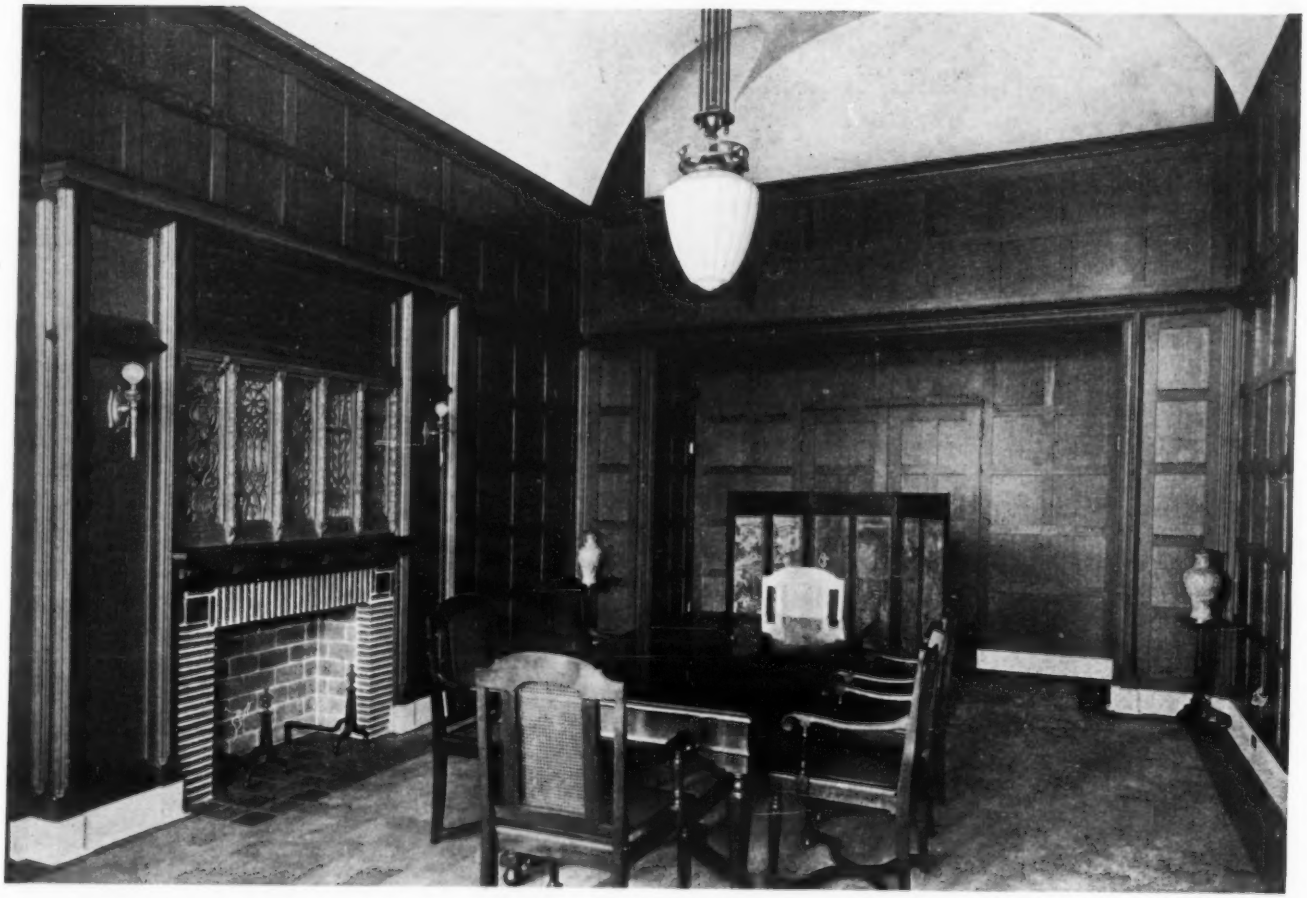
MEZZANINE FLOOR PLAN—OFFICE BUILDING OF PERKINS, FELLOWS & HAMILTON, CHICAGO.



FIRST FLOOR PLAN—OFFICE BUILDING OF PERKINS, FELLOWS & HAMILTON, CHICAGO.



SECOND FLOOR PLAN—OFFICE BUILDING OF PERKINS, FELLOWS & HAMILTON, CHICAGO.



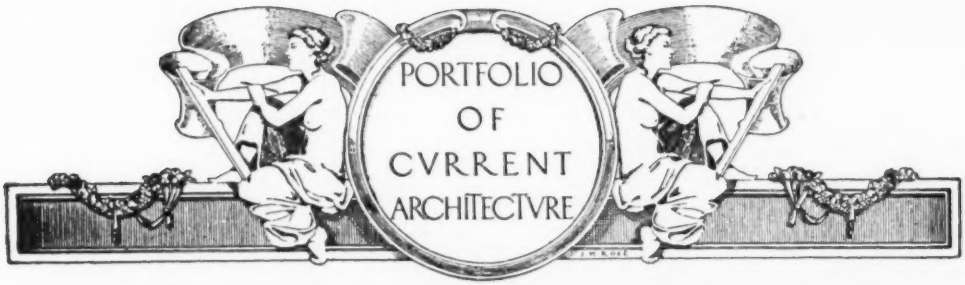
RECEPTION ROOM—OFFICE BUILDING OF
PERKINS, FELLOWS & HAMILTON, CHICAGO.

economic reasons. The present building is a good example of what is being done under Gothic influence.

The plan of the building is quite as interesting as is the design. The contractors' room, with a telephone booth and with a clerk in charge offers every facility for contractors who are figuring on work. The waiting room and the public office on the first floor are not partitioned off. The reception room on the main floor is two stories high. On either side of this room and facing the street are the private offices of the members of the firm. On the mezzanine floor are the library and a private drafting room. The library is well adapted for conferences on new designs, which are prepared in the private drafting room. The general drafting room, which occupies the whole upper (second) floor, is a model of lighting arrangement.

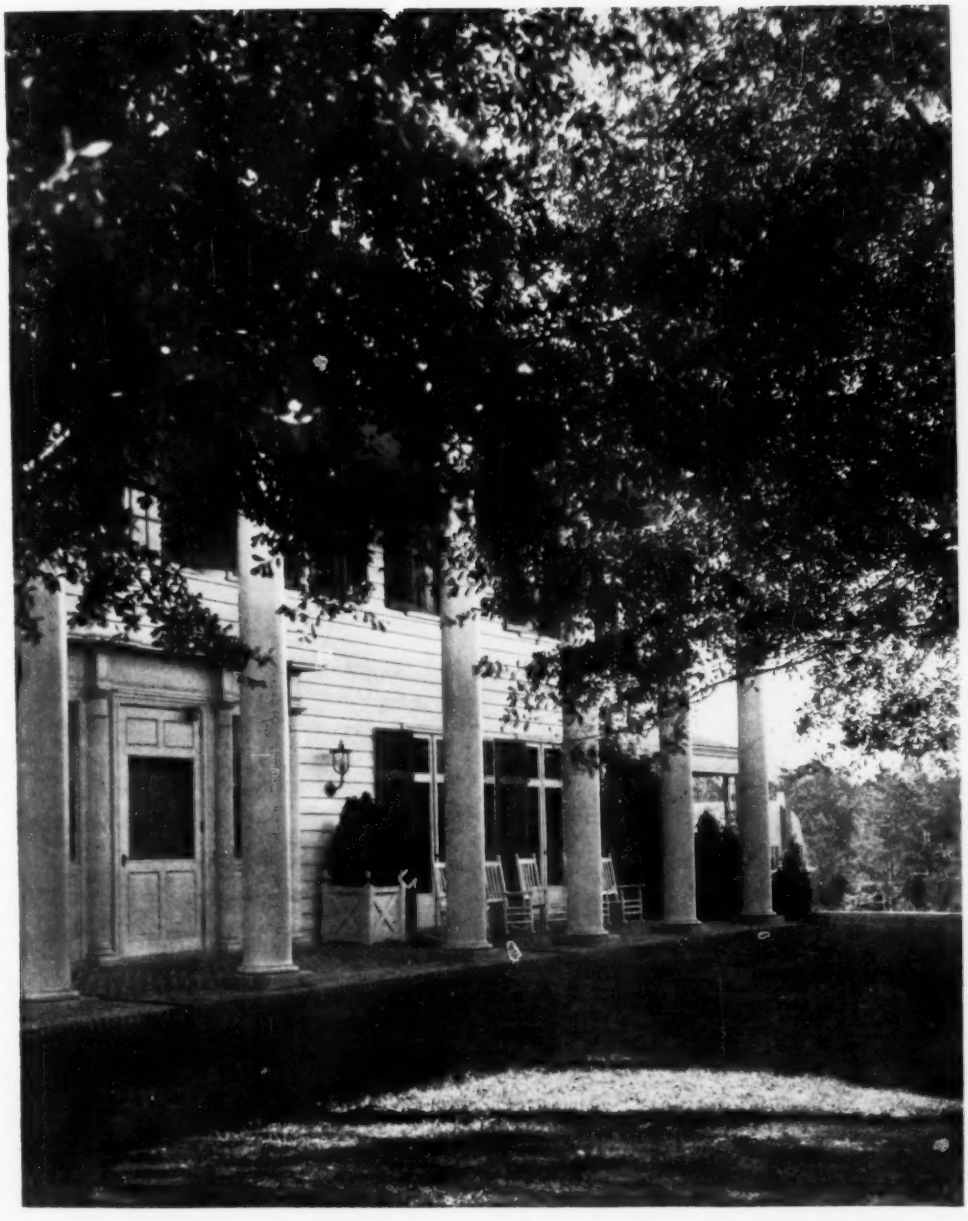
The arrangement of the ground floor is very original. The contractors' room is two steps above the sidewalk and there is no excavation below it. The heater room and coal room are nine steps below the entrance hall and five steps below the courtyard and garage, which are slightly lower than the front sidewalk. The paved court provides surface drainage for the driveway and garage and is deep enough to turn a motor car around. The garage has room for two cars, and another may stand under the shelter of the terrace in the rear of the first story. Two dead brick walls of other buildings bound the court on the south and west, and in due time will be covered with climbing vines. That on the west protects the windows from the afternoon sun. The terrace is reached by an outside iron stairway, which is part of the fire escape system on the rear. It is surrounded by a brick parapet wall with flat coping for flower boxes. The waiting room is provided with glass doors giving onto the terrace. Thus every possible provision has been made for convenience and pleasing surroundings. The front windows are all made with steel sashes filled with leaded glass and opening outward. The inside trimming, where wood is used, is of polished oak, with flat finish. Most of the floors are covered with large burned clay tiles.

HOUSE OF MRS. HUNTER P. COOPER, ATLANTA, GA. HENTZ, REID & ADLER, ARCHITECTS.



LOGGIA—HOUSE OF MRS. HUNTER P. COOPER, ATLANTA, GA. HENTZ, REID & ADLER, ARCHITECTS.

GARDEN VIEW—HOUSE OF MRS. HUNTER P. COOPER, ATLANTA, GA. HENTZ, REID & ADLER, ARCHITECTS.



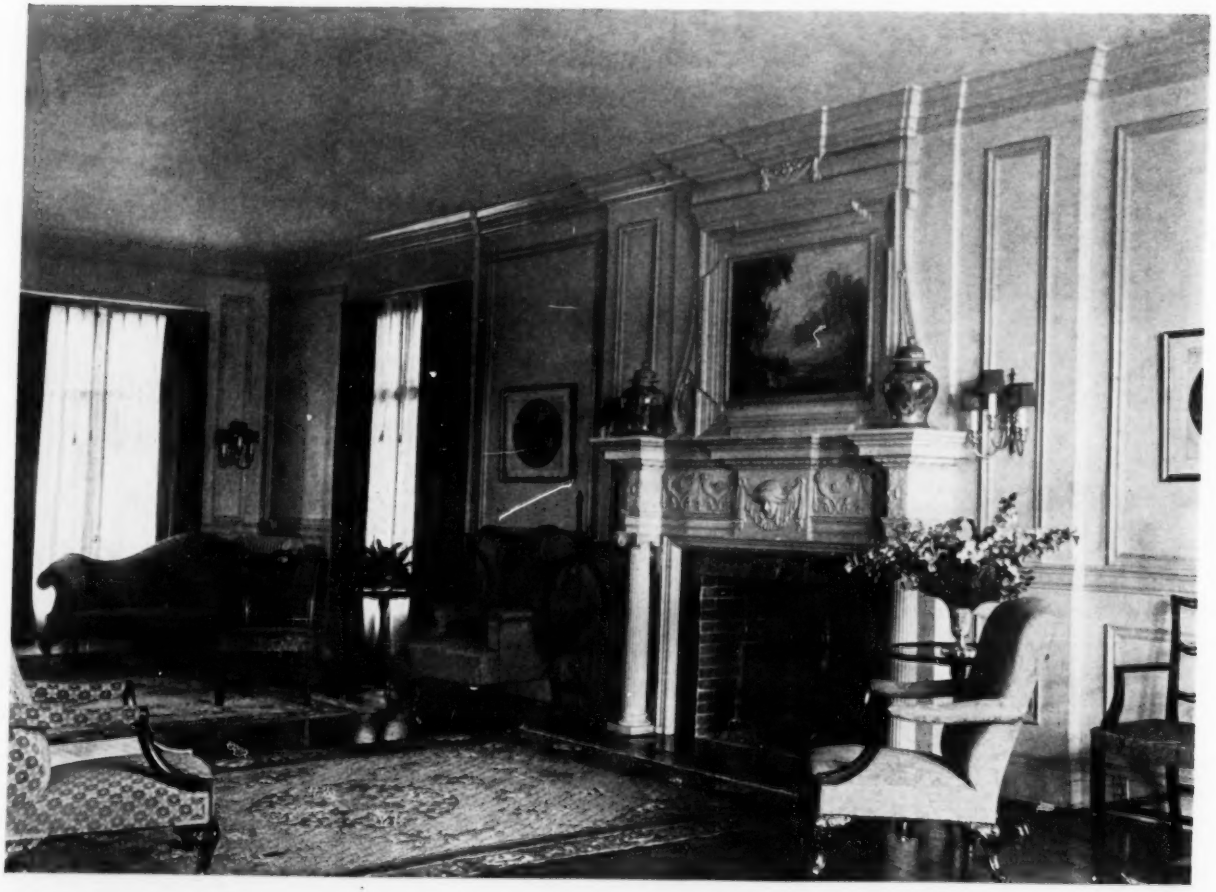
PORTICO — HOUSE OF JAMES L. DICKEY, JR., ESQ., ATLANTA, GA. HENTZ, REID & ADLER, ARCHITECTS.

(The entrance and garden fronts of this house were published as Figs. 31 and 32 in the October issue.)

VIEW INTO HALL—HOUSE OF JAMES L. DICKEY, JR., ESQ., ATLANTA, GA. HENTZ, REID & ADLER, ARCHITECTS.

VIEW INTO LIVING ROOM—HOUSE OF JAMES L. DICKEY JR., ESQ., ATLANTA, GA. HENTZ, REID & ADLER, ARCHITECTS.

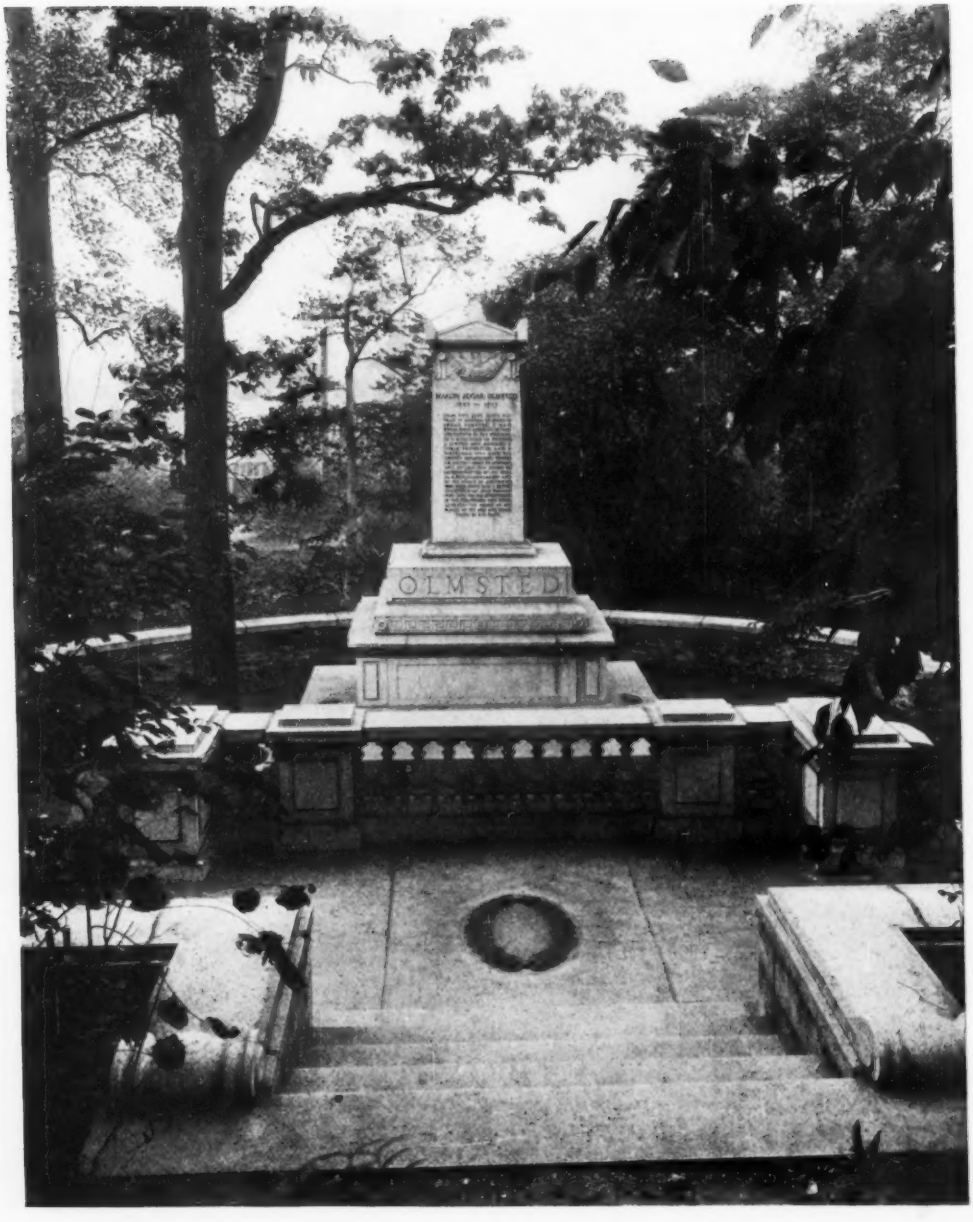
MANTEL IN LIVING ROOM—HOUSE OF JAMES L. DICKEY, JR., ESQ., ATLANTA, GA. HENTZ, REID & ADLER, ARCHITECTS.



LIVING ROOM—HOUSE OF JAMES L. DICKEY, JR., ESQ., ATLANTA, GA. HENTZ, REID & ADLER, ARCHITECTS.

ENTRANCE PORCH—HOUSE OF MRS. J. W. SHINHOLSER MACON, GA. HENTZ, REID & ADLER, ARCHITECTS.

HOUSE OF MRS. J. W. SHINHOLSER, MACON, GA. HENTZ, REID & ADLER, ARCHITECTS.

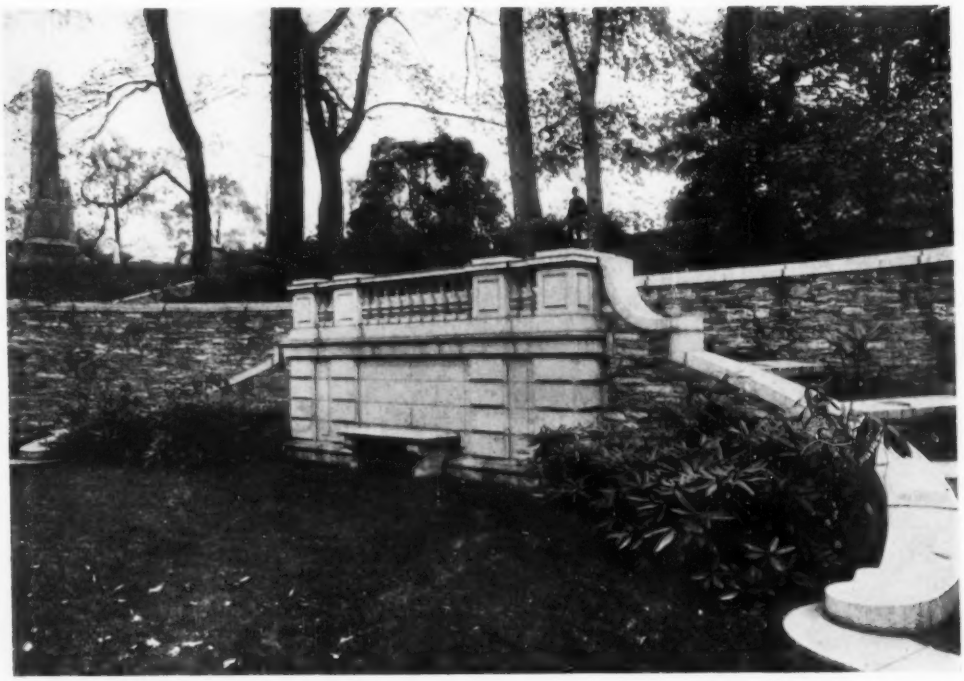


OLMSTED MEMORIAL, HARRISBURG, PA. ALBERT KELSEY, ARCHITECT.

"Terraced upon a steep hill, the monument does not explain itself very well in photographs, and until the reaching bronze figure of 'Grief' is added to the base it will not be complete."

OLMSTED MEMORIAL, HARRISBURG, PA. ALBERT KELSEY, ARCHITECT.

"In perspective and seen from the lower level. One can well imagine how a figure with outstretched arms laying a wreath on the shelf below the line of ornament will satisfy the mind and eye."

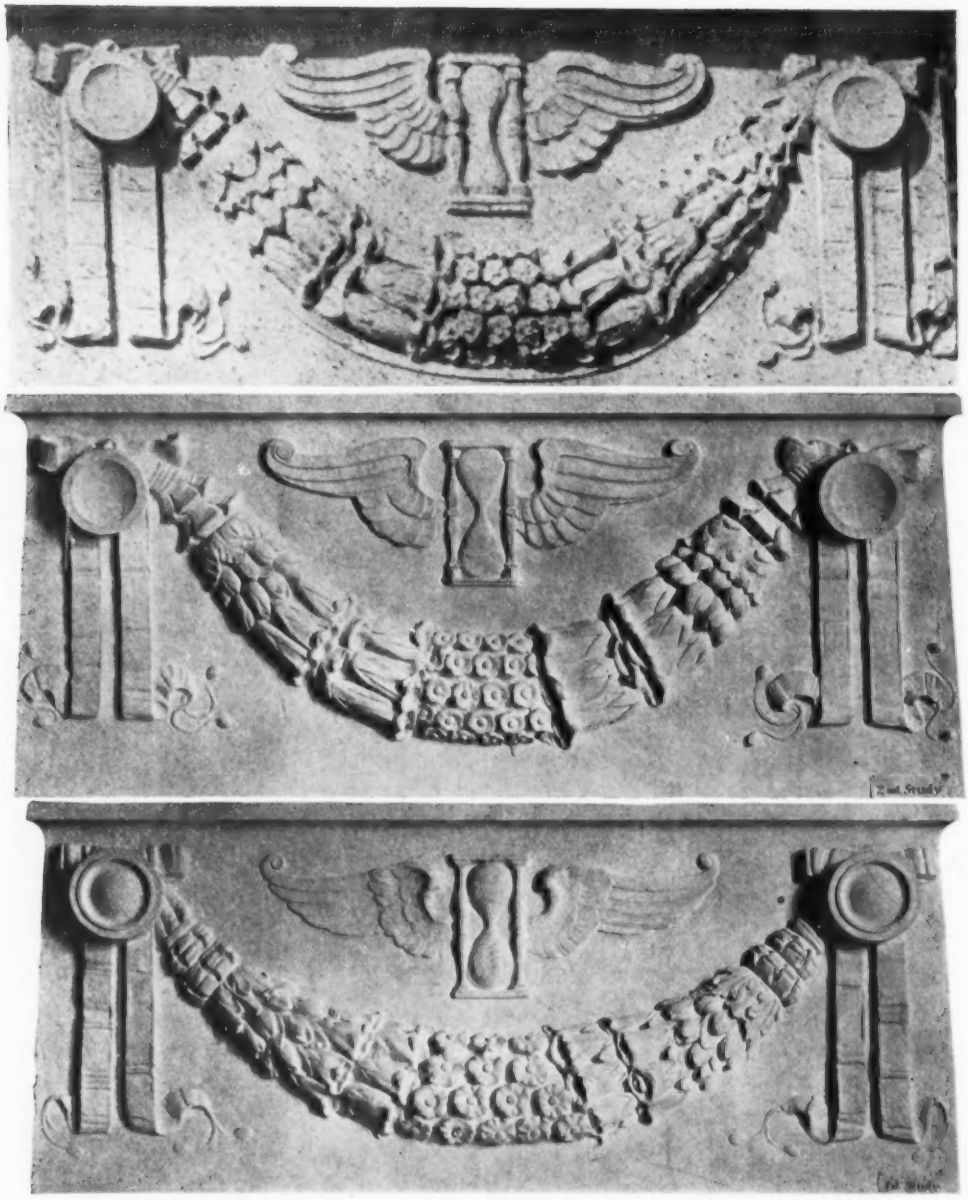


OLMSTED MEMORIAL, HARRISBURG, PA. ALBERT KELSEY, ARCHITECT.

"The turf-covered ramps gently sweeping down to the level of the burial plot are restful and quiet. Each step is marked by an inconspicuous bronze symbol."

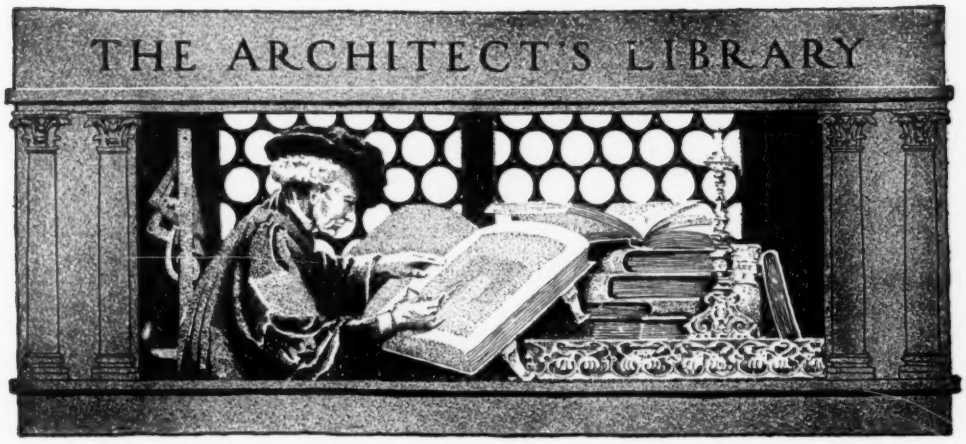
DETAILS OF THE OLMSTED MEMORIAL, HARRISBURG, PA. ALBERT KELSEY, ARCHITECT.

"Note the treatment of the base. The clay model for the bronze symbol shows how the letter 'O' has been suggested; the stems of the lilies are emphasized to bring out the form, which was further accentuated in execution by polishing the oval granite on which the bronze wreath is set."



DETAIL OF THE OLMSTED MEMORIAL, HARRISBURG, PA. ALBERT KELSEY, ARCHITECT.

"A comparison of the two plaster studies reveals a totally different treatment of the same motive. The swag has lost its listlessness and the wings have been gradually conventionalized. In the executed work the ribbon has been carried under the festoon, giving unity to the whole design."



THREE BOOKS FOR DRAFTSMEN

By RICHARD F. BACH

Curator, School of Architecture, Columbia University

ASSURED that architectural draftsmanship has fallen from the high place it formerly graced, Mr. Reginald Blomfield, well known to us as a gifted writer upon architectural subjects, has prepared under the title, *Architectural Drawing and Draughtsmen* (large octavo; pp. xii + 96, and 97 pl., unnumbered, printed on both sides of page, Cassell, London; Funk and Wagnalls, N. Y. 1912. $3.60), an all too brief treatise having the aim of encouraging students in the direction of fine draftsmanship chiefly by offering them a comprehensive purview of the finest examples produced by this art in the past. The past, in this case obviously must chiefly be the Renaissance. The author, being an English architect and past president of the Royal Institute of British Architects, has also endeavored to broaden the horizon in particular of the English draftsman who, he finds, has been too prone to ignore the excellent work of Frenchmen and Italians in this province; and if he did grant the great continental draftsmen more than passing attention, he has not seen fit to include in his survey men active in allied fields of design and drawing as were those of the name of Lepautre, of Marot, and others of like calibre. These shortcomings Mr. Blomfield has sought to counteract by a most comprehensive examination of the chosen field as manifested in its continental products.

To be sure, the basis of good draftsmanship must be the study of form and the technical mastery thereof; and the final expression of good draftmanship must be fine drawing, with a modicum of inspiration contributed to the agency of individual character or personal temperament. The author has ably carried through his inspirational purpose, using as a vehicle an excellent and thoroughly readable accompaniment to an extended series of illustrations, themselves representing an admirable selection from the best sources. He offers no technical disquisitions on geometrical drawings, isometric projections, perspective and skiagraphy, but rather attempts in a general way to enlarge the modern (that is to say, in this case, the more specifically English) conception of architectural drawing by tracing its development in the past and by reviewing the workmanship

of great hands, of men who have risen above the ranks of the mere technician not only by their manual dexterity, but by the rarer qualities of selection and insight, and in exalted power of imagination.

In this connection the author indulges his dislike of purely ephemeral aspects of draftsmanship, and his words in this regard should be interesting to all in any way affected by the processes and results of modern architectural drawing: "Fashion has so much to do with current reputation that the only safe standard to judge by is that set by men who have long been recognized by competent judges as past masters of their art. For that, after all, is the only working test. Ingenious writers may find transcendent merit in the work of some long-forgotten artist, and in some rare instances the merit is genuine, particularly in the case of architects whose work is difficult to trace, and whom not only the public but artists themselves are slow to recognize. But the verdict of time is seldom wholly wrong, and students, at any rate in their period of training, will be wise to take as their masters only those artists whose reputation has stood the test of time, and to regard with an open mind, and even suspend judgment on, methods and models that are still in the melting-pot. It is always a difficult problem to assess contemporary progress. There is the danger of mistaking the fancy of the time for a genuine movement, and the scorn with which one may be tempted to regard the work of two or three generations back may recoil on one's own head. . . . A hundred years ago and earlier there were fashions, too; but they were fashions of considerable solidity, changing not year by year, but generation by generation, and the student in mastering the fashion of his generation at any rate mastered one manner fairly completely. Nowadays he is apt to dash from one manner to another, and never arrives at anything. It is essential that the student, in selecting his models for imitation, should fortify his judgment by the study of history and the analysis of old work."

Obviously the object of architectural drawing is the representation of architecture; but this definition must be taken to include a wide field of draftsmanship ranging from the plainest and most practical working drawing made for the purpose of facilitating actual construction to the opposite extreme of such extraordinary visions as Piranesi produced in his memorable Carcere de Invenzione. Architectural drawings must differ of course as to the intention that prompts their making. According to Mr. Blomfield this intention may be either objective or subjective—"that is, the intention of the draftsman may be either to make drawings which can be carried out in the building by other hands exactly as drawn or, on the other hand, he may wish to produce in somebody else's mind the impression of the building as a whole as he conceives it, or he may employ architectural forms as the symbols and embodiments of some abstract idea, the imagery of a world which never has existed in fact, and never can. Some of the French draftsmen so used them in the seventeenth century, and, in a far more notable manner, Piranesi in the eighteenth. In the first place he will proceed by geometrical drawings; in the second and third by perspective representation, with such accessories as skiagraphy, figure or landscape drawing, and the like, as may be necessary to drive home his ideas."

Geometrical drawings, that is, the practical plans, sections and elevations worked out to scale, have only two essential conditions, namely, accuracy and clarity: the former a matter of knowledge and care, so that the translation of the drawing into materials by a builder, who except for the drawings and the supplementary specifications is entirely ignorant of the designer's intentions, may be correctly effected; the latter which follows logically from the first, so that the drawing may leave no doubt in the spectator's mind as to what it is intended to represent, all tricks and devices being eschewed in the interest of legibility.

On the other hand, the situation is almost reversed when we consider the other function of architectural drawing, namely, that of producing in the mind of another the impression of an architectural

idea. To quote the author: "We are not concerned here with a bare and literal statement of facts. The impression aimed at is a complex one; that is, the draftsman aims at producing the impression not only of certain abstract forms of architecture, but of those forms as a whole, and as a whole considered in relation to its placing on the site, its environment of sky and landscape, and even the intention of the building. All these matters have an important bearing on the value of the design, and their presentation is scarcely less essential than the data given by the working drawings, in the building up of the total impression to be conveyed to another mind. The line that in the geometrical drawing had to be hard and precise now becomes sensitive, even tentative, feeling its way and clinging on to the idea, as it were, in order to suggest it in all its multifarious complexity. Absolute and exhaustive accuracy in detail is less important here than accuracy in the statement as a whole. It may be found, in setting up a perspective of a building according to the strict rules of the art, that the result is disappointing; somehow the building looks different from what had been expected, and if it has been carried out, from what it looks like in fact. The explanation is that it is not only that the eye sees the buildings in perspective, but the brain takes its share in the process. Impressions are formed with lightning rapidity. Knowledge previously acquired comes into play; and unconsciously, because it is done so instantaneously, the mind jumps from what it sees to much that it does not see. The net result left in the mind by the observation of a building is its perspective modified by several other considerations. A draftsman is justified, therefore, in taking these other considerations into account, emphasizing part of the building in one place, modifying it in another; availing himself, in fact, of those principles of selection and restraint and suggestion which every artist has to employ in the statement of his impression. . . . The limits of the architectural draftsman are more closely set than those of the free artist. But within those limits it is more important to convey the main idea than to give a literal and laborious transcript which, in fact, misrepresents the building."

Then we have in addition the use of architectural forms for the expression of abstract ideas. Here we are, of course, on the debatable ground which lies between architectural drawing and the quality of suggestion that falls within the province of the painter. Here again Piranesi remains the most remarkable historic example of an artist who expressed ideas by means of architectural forms.

Mr. Blomfield's book contains but five chapters, so that there are more than nineteen plate illustrations for each. The first section which covers the nature and purpose of architectural drawing and of which we have endeavored to give some suggestion in the preceding, includes also a study of the few medieval drawings which have come down to us; drawings, by the way, inspired by a real conviction which makes them fundamentally true and valuable. The author seems to consider it a matter of good portent for medieval architecture that the great complexity of coördinated office drawings did not exist to hamper its spontaneous growth. He says: "It might be an interesting speculation to consider how far some of the qualities of medieval architecture were due to the absence of organized working drawings; its informality, its habit of improvisation in detail, its irregularities and neglect of symmetry in design. The implicit reliance on drawings in modern practice would certainly account for much of the mechanical quality in modern Gothic. For Gothic architecture was essentially a builders' art; that is to say, its whole scheme and conduct were local, initiated and practiced on the spot, not administered from a distance; and this had one immense advantage: that the designers worked in the concrete, not in the abstract—they saw what they were doing, and could test and alter their programme as the work went along. Our modern Gothic architects have been trained, not in the workshop and on scaffolding, but in architects' offices and schools. They have no means of conveying their ideas

to the builder but through a system of drawing which came into existence for the purpose of a quite different method of design."

In the second section the author deals with architectural draftsmen of the sixteenth century, with due emphasis on Bramante and the San Gallo in Italy, the Du Cerceau and Philibert De L'Orme in France. This is folowed by a chapter on French draftsmen of the seventeenth century such as Le Muet, Jean Lepautre and Daniel Marot and their followers, Le-Blond, Bérain and others. The next section deals with a selected number of Italian draftsmen of the seventeenth and eighteenth centuries, among them Fontana, Bernini, Pierino del Vaga, Algardi, Vasari, and Bibiena, and gives considerable space to the master of them all, the inimitable Piranesi. The concluding chapter deals with English architectural draftsmen, with due attention to Inigo Jones, Sir Christopher Wren, Colin, Campbell, Gandon, Gibbs, Girtin, Nesfield, Waterhouse and others.

There is much in the volume under consideration that will be of value to the practitioner; there is, above all, the inspiration of a great past which has set high the standard of performance in this fascinating field. We can only hope that a subsequent edition will prompt the search for a different paper stock for the plate reproductions. The uniform presentation of all plates upon paper with glazed surface, regardless of the original surface upon which the drawings were made by the artists or designers, tends to limit the effectiveness of what the technician in ink and color calls the values of his drawing.

II.

In his excellent analytical study entitled: *Indication in Architectural Design* (Quarto; pp. 48 and 50 plates. New York: The William T. Comstock Co. 1916. $5), Mr. David Varon has contributed to the drafting room library a volume that may be considered the first really useful text book or practical treatise in the theory of architecture which has seen the light on this side of the Atlantic.

The author's purpose as expressed on the title page of the present work was to reproduce in this book the essentials of a material method of studying architectural design with the help of indication as a means of analysis. To attain this object he has presented within the limit of ten chapters and fifty plates, the latter all reproductions of his own sketches, a graded sequence of lessons from the simplest elements entering into design, through interpretation of mass, silhouette and comprehensive composition, to the solution of the complex problem. The method adopted is fundamentally pedagogical and therefore carries home its point from chapter to chapter in telling manner. By way of example, we will find a section entitled: Design of Elevations Involving Salient Features. This discusses in detail the various methods of treatment of a single dominant feature as the sole accent or as abetted by other flanking motives. In illustration of the discussion in this chapter sketches on no less than four plates are referred to the latter, presenting in each case a series of historic examples boldly but very expressively indicated. This chapter and these plates are but steps in the progress of text and illustration material, each of which is carefully constructed as an organic series development.

The spirit of the title of the book has been carefully maintained throughout; each plate is itself built up organically whether dealing with elevation or plan or perspective. There is no lack of technical achievement, for, as has been ably said, such achievement in indication is tantamount to an exact appreciation of just how much may be left out of a drawing. The plates as a series are so instructive that with the meagre accompaniment of explanatory text, which for each illustration appears on the back of the preceding one, the series of illustrations could themselves be used as an effective text book. In fact we can picture the usefulness of Mr. Varon's plates as the basis of a series of lectures which might be delivered by the patron to his students or by the architect to his draftsmen. It might be a thoroughly available suggestion that certain of these plates

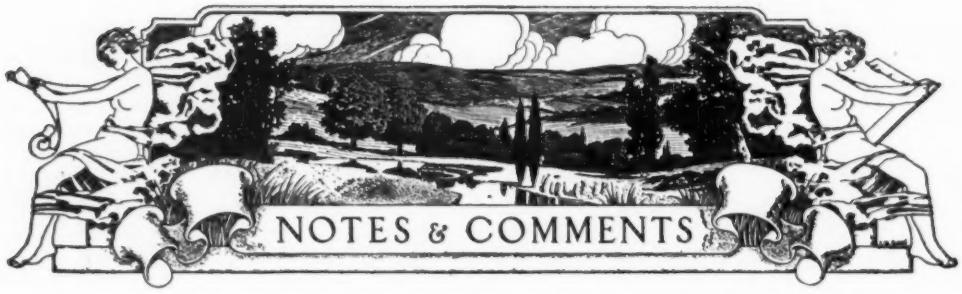
be hung up in the drafting room by way of suggestion to learners so that the latter may establish in their own minds the reasonably analytic mode of approach which has been the success of Mr. Varon's volume. In fact the man long in practice will find in these pages systematically set down those guiding truths which he has discovered for himself by dint of much study and experiment, but which can be firmly fixed in the mind and given an illuminating focus by the logical presentation of ideas for which architectural indication is a thoroughly available means; what is more, Mr. Varon has been especially qualified, through having had the advantage of the inestimably valuable instruction of Guadet and Paulin. Wherever there are ambitious draftsmen this volume will find a haven, for it has long been wanted and it will promptly constitute itself a most valuable *vade mecum* for students of architecture everywhere.

III.

An eminently efficient and handy volume for the busy drafting table is Dewitt Clinton Pond's *Engineering for Architects* (Crown Octavo, pp. viii + 104. New York: The Columbia University Press, 1915. $2). It is well known that architects regularly encounter problems in structural engineering that lend themselves to solution with no greater aid than that of simple mathematics and the type of hand book published by one of the leading steel manufacturing plants; but nevertheless occasional problems present themselves for which there is no generally known method of attack and, as a result, reliance must be placed upon a qualified engineer or else the risk of possible failure of the structure must be faced.

Not infrequently ignorance of the supporting strength of structural members is the reason for unnecessary cost. Mr. Pond aims to obviate these various difficulties by providing the necessary and useful information in his brief discussion, with no pretence at the introduction of any new methods of calculation and with no suggestion that there are no other methods beyond those he cites. The information given will facilitate the design of floor beams, girders, column sections, grillage beams, and simple roof trusses. The subject matter is covered in twelve terse chapters with ample diagrams, calculations, tables, etc.

Not the least important office which this handy volume will accomplish is that of reducing the mystery which for many a practitioner enshrouds such essentially plain subjects as the sizes of beams and the column sections necessary for structural purposes under stated conditions.



Professor H. Langford Warren.

When Professor H. Langford Warren died last July at the age of sixty years, American architectural education lost one of its finest personalities. Professor Warren's lifework was twofold. He was the founder and organizer of the School of Architecture of Harvard University, which he developed into one of our chief schools and of which he was the head for twenty years. But perhaps an even greater achievement was his brilliant teaching of the history of architecture. It is not exaggerating to say that nothing surpassed it in any school in the world. At the Ecole des Beaux-Arts, where the ablest teaching in architecture is to be found, the history of architecture excites no profound interest in either teachers or students. The reason for the perfunctory attitude at Paris Professor Warren himself understood perfectly when he pointed out in an Institute debate that modern French architecture, with all its faults and limitations, is the only living style of architecture in the world today (though since he made this statement certain phases of German modernism may claim recognition). Therefore, since they have a style of their own, Frenchmen do not have to search history to borrow and to assimilate. They may pick up their art forms as they learn to design. But for other peoples, especially for Americans who are condemned to work in an eclectic method, the thorough study of the history of architecture is a necessity. This necessity Professor Warren knew profoundly how to provide.

In his teaching, the experience of a practising architect made real and mellowed the research of the scholar. Indeed, it might be said of him that he was an architect who at the same time happened to be a scholar. He is to be counted among the few pioneers who lifted art-criticism out of the bog of archeology and literary snobbery where it floundered during the nineteenth century.

Like many men who come to distinction in the United States, Professor Warren had the benefit of a wide experience that helped him greatly when he finally found his lifework. He was born March 29, 1857, in Manchester, England, where he spent his early boyhood. Later his father lived in Germany during 1869-71, and the son gained part of his education in the gymnasia of Gotha and of Dresden. Afterward he returned to England to attend Manchester College for three years. After drafting in a Manchester office, he moved with his family to this country, where he came under the influence of Charles Eliot Norton. In 1877-78-79, young Warren studied at the Massachusetts Institute of Technology; then he spent several years in the office of H. H. Richardson at a time when it was a training school for a band of exceptional young architects—among them Stanford White—who became leaders in the profession. Thereafter Mr. Warren practised, principally in Boston, in a partnership which he continued throughout most of his life.

It will be readily understood that when, in 1893, the architect Warren was called to Harvard he brought to the professor's chair (he became a full professor six years later) a ripened judgment, an imaginative insight into the problems of design and of construction that practice in the profession best gives to a critic of architecture.

Professor Warren's work at Harvard was in a sense a struggle. He began to establish his school when French influence—French influence so-called—was sweeping over the profession, spread by a stream of returning enthusiasts from Paris. That took place twenty years ago and the results are to be seen in the buildings of that time. The Paris missionaries would brook

no compromise; they wanted America to adopt not only French teaching but French art-forms as well. Some practising architects resisted the movement, among them Mr. McKim, already well on his career as the greatest architect of the English-speaking race, the greatest at any rate since Christopher Wren; Mr. Platt in New York, some architects of houses in Philadelphia like Mr. Eyre and Mr. Day, and in Boston like Mr. Bigelow. The work of such men could be tolerated, for it was too important to be decried successfully, but the Paris faction thought it presumptuous for any school to teach anything but the style of the Beaux-Arts. This all seems trivial today, but the public hardly realizes that only fifteen years ago it required great courage to hold out for the principles that are commonplace now. We may be thankful that Professor Warren lived to see the vindication of many of his ideas. Think of it! In some quarters he was chided not only for appreciating Colonial architecture, but for teaching it in design problems.

For a time Professor Warren went almost too far in opposition to the French propaganda. He was not primarily a teacher of design, and in his anxiety to instill appreciation of fine taste in the students, he sometimes discouraged initiative and imagination in planning by insisting on conscientious care in details of motive and ornament. But as his opponents grew less fervent in their worship of French taste, Professor Warren became broader in his attitude toward the design policy of the Harvard school. At the same time the work of McKim and of the others noted above was beginning to tell. Almost suddenly the attitude of the architectural world shifted over. It was agreed that America should adopt the sound and inspiring methods of Parisian teaching, but that she must develop her own traditions of good taste in architecture. Then Professor Warren made a brilliant move. He succeeded in bringing to the United States Professor Armand Duquesne, one of the soundest teachers of the Ecole des Beaux-Arts in theory and one of the ablest in planning, whose mind works almost mathematically in the solution of architectural problems. He was the first winner of the Grand Prix de Rome to come over to the United States to teach. Unfortunately, after two years here the war called him back to France. By this time the school had won the backing of some of the ablest members of the profession, and Professor Warren felt that even McKim himself would have come to Cambridge to teach if it had been more accessible from New York.

Professor Warren performed a further valuable work, though one not so well known. This was his teaching of the abstract theory of architecture as distinct both from history and design by specific problems. His history was replete, in a vital way, with criticism and with illustrations of principles of architectural design, but he felt the need of a short series of lectures on the philosophy of beauty in architecture. Professor Warren had become impressed with the remarkable presentation of the principles of design in the arts formulated by Dr. Denman W. Ross in the Department of Fine Arts in Harvard College, whose brilliant analysis of the subject is only just being accepted. These general principles of design in the decorative arts Professor Warren applied specifically to architecture, with additional exposition of the kind of beauty which is a function of utility in architecture. Or, in other words, architecture is a useful art, and in addition to the beauty that may lie in its forms, it may have a further beauty that comes from the expression artistically of use and of construction. These lectures were extraordinary for insight, sympathy and clarity. They are to be compared to the best French expositions of theory. Indeed, students who went to Paris for further study in architecture found that they were grounded in the same principles that the art-teaching there set forth, if allowance be only made for differences in individual personality and for the more imaginative French ideal.

The above fragmentary account of his organization of the school will aid in understanding Professor Warren's greatest work—the teaching of the history of architecture. His course ran through three years, though later it was shortened to two years, and covered the architecture of antiquity, of the Middle Ages beginning with Christian Roman architecture, and also Renaissance and modern architecture. In these lectures the viewpoint was somewhat different from his other method of almost mathematical analysis—the forms and construction of architecture were presented as the expression of the civilizations that produced and developed them. From these lectures the student went away impressed with the profound truth that architecture, and indeed any art, is an exact symbol, a perfect mirror of the life of the people cre-

ating it. Misled by literary sentimentalism, until recently art has been considered rather as the effort of exotic individuals. I suppose that law school students issue from the instruction in the case system holding much the same attitude toward law. It is not to be supposed, however, that Professor Warren consciously tried to introduce legal methods of instruction into the teaching of art. If anything, he probably felt he was only making use of the laboratory methods of pedagogy. At any rate, so thorough was his scholarship that one derived as clear an idea of the history of man in political, economic and intellectual fields as he might gain from much instruction in "pure" history; and with perhaps a clearer conception of the personality of the great peoples of the world as visualized in their art than he might derive from any source whatever. Under such inspiration architectural criticism became almost a science, so unerring were the judgments—judgments not forced on the class, but which the class seemed to form of its own accord, so surely and inevitably was the progress from facts to conclusions. Nevertheless, neither the pedantic nor the bookish were present in this method. Here, no doubt, the artist and the practising architect in the teacher saved the situation. There was nothing of the archeologist—art-dissector—about Professor Warren. He understood the value of archeology in research, but he felt it to be a different field from art criticism.

Unlike most critics, Professor Warren had no antipathies toward any one style of architecture. Although he was one of a few among his contemporaries who understood Gothic, and one of a handful who could teach it, he was not blind to merits of classic or of Renaissance architecture. He comprehended fully the charges that are brought against these styles, and was unsparing in pointing out defects; but his logical and sympathetic mind knew exactly where to stop. In the bitter controversy between the classic and the medieval his position was this: the early Renaissance work in Florence and other cities of North Italy—the product of the creative art-guilds—was entirely to be admired; and in the "High" Renaissance the work of Raphael in the sketches for St. Peter's, especially in the uncompleted Villa Madama, and, to an even greater extent, the creations of Baldassare Peruzzi, promised achievements as noble as any of the other architectural styles; but that the spirit of ostentation and of the grandiose developed in Renaissance Rome crystallized the impulse into mechanical and arbitrary forms. Architecture degenerated into formulae that first deadened, then debased the style into Rococo extravagances.

Towards Roman architecture Prof. Warren's attitude was equally discriminating. He appreciated the worth of Roman discoveries of construction, especially the construction of vaults, and of the Roman capacity to plan on an immense scale; but he also demonstrated that the Romans borrowed most of their art-forms from Hellenic Greece. Thus he accomplished the paradox of taking away from the Romans what little credit some of their hostile critics allowed them, yet of leaving them with more credit than most of their admirers claimed for them. Hence his epigram in the same Institute debate alluded to above, in which he summed up a large part of the architecture we use. Speaking of the worst aspects of Renaissance architecture, he called it "the reflection of a reflection of a reflection" — Renaissance Rome, ancient Rome, Hellenic Greece, Greece. And he might have added another "reflection" for some of the architecture of twentieth century America.

His powers of literary expression were unusual. At the end of the year he wound up his lecture course on antiquity with a description of Rome in the zenith of its architectural glory that was so dramatic, so imaginative, and so sound architecturally, that his class of lecture-toughened Harvard undergraduates burst into long spontaneous applause. It was a tribute also to the man himself, to his fervid, tireless effort to advance his school in the cause of fine architecture. It was a tribute besides to a gentleman of the noblest impulses, holding the most generous feeling towards his students with whom he put himself into intimate contact. Professor Warren was one of that brilliant galaxy of Harvard teachers which has been so dimmed by death recently. It was his work to found at Harvard in company with Norton, Moore and Ross a really great tradition of art-study and appreciation, a tradition not without influence in civilizing the instincts of American life. Charles Eliot Norton founded the tradition on a literary basis and Dr. Denman Ross and Professor Warren transferred it to an artistic basis where it properly belongs. Each according to his time; if Norton had not held the viewpoint of a literary man it is doubtful whether he

could have made art respectable to the puritan-victorian intellectualism of America. It is to be regretted that, alone of the four, Professor Warren did not live to combine his extraordinary lectures into books, for he could have produced, in several volumes, an architectural history of the various styles that should have been the standard for both architects and scholars.

JOHN TAYLOR BOYD, JR.

Old Windmills of the South Side of Long Island.

Had Don Quixote ridden abroad to battle with windmills during the later part of the Colonial period of American architecture, he would have been challenged by many wind revolving arms as he urged his steed along the country road that skirts the sea on the south side of Long Island. The picturesque wheels and broad fans are at rest now and have no call either to grind the grain of the countryside or to challenge the chance knight-errant, but they do challenge the attention of every lover of the picturesque and unusual in the art of building.

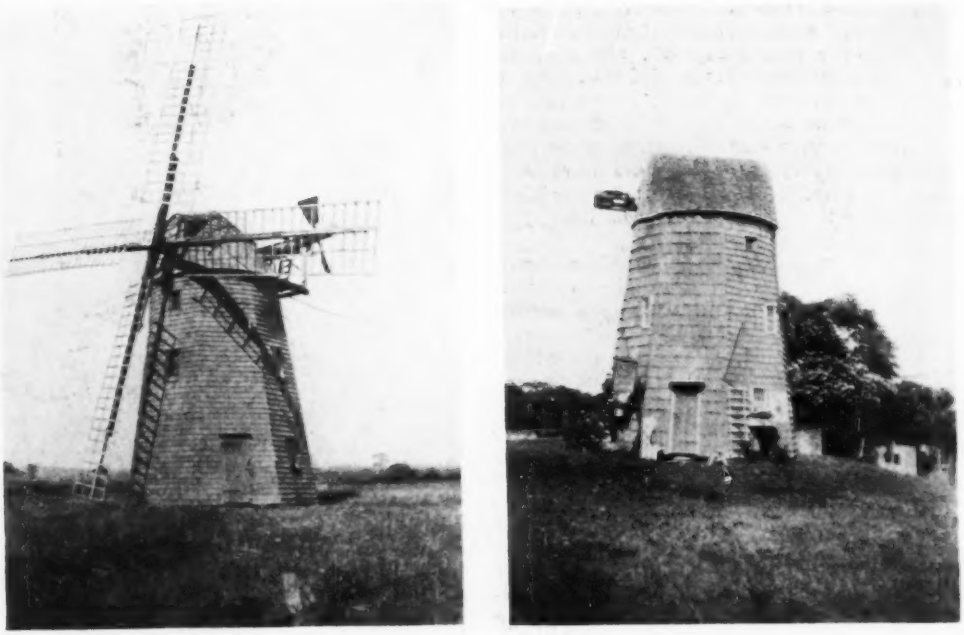
Beginning as the traveler crosses the bridged canal that would rightfully make the old name of Canoe Place obsolete, and journeys among the rolling Shinnecock Hills, the first of a series of these novel structures appears. Through beautifully developed Southampton, Bridgehampton and Easthampton, the road frequently passes in view of one of these odd structures; and even at Water Mill, where there is water power enough to turn the millstones, sufficient of a departure from the ordinary to give the village its name, a sturdy wooden fan gives the wind a chance to aid or compete with its sister element, the water.

MILL AT HAMPTON, L. I.

MILL AT HAMPTON, L. I.

These early windmills are in most every case free standing structures, octagonal or circular in plan, of modest diameters but of sufficient height to afford the clear sweep of the oftentimes thirty-foot fans, and also to reach an elevation that has an unbroken breeze. In order further to facilitate plenty of wind for motive power, the mills were usually placed on high ground, on the knoll of a hill or beside a clear sweep of water, sites that naturally add to the picturesqueness of any building and render it a conspicuous landmark.

As to the construction of these mills, frameworks of roughly hewn, oaken timbers are found to be fastened together by tenon and mortise and wooden pegs, in



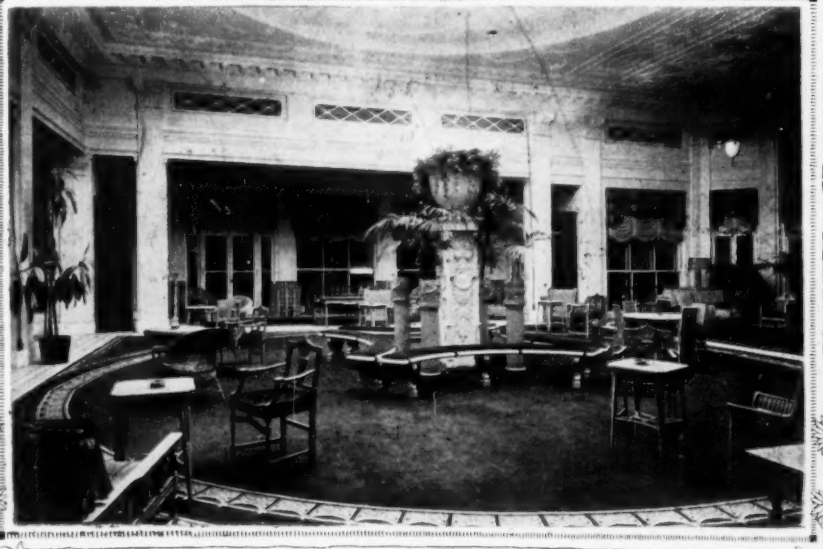
OLD WIND MILLS ON THE SOUTH SHORE OF LONG ISLAND.

the use of which the early builders were most adept. Great hand-whittled shingles, often some ten inches to the weather, form a covering of softest grays. The openings are small and but to lighten the tiny stairway or close relative to a ladder that turns and twines up to the top. The roofs of these old mills must have offered a specially difficult problem for the early carpenter, but the problem was solved by him in the most direct manner, and nothing could be more effective than the graceful lines of the shingled caps that crown the structures.

The mills being operated by the power of the wind acting upon oblique vanes or sails which radiate from a horizontal shaft, their four great arms are the most prominent feature of a prominent figure, and give a certain jauntiness of character like the gay waving feather stuck in the cap of an otherwise sombrely garbed peasant of most prosaic mien. The weight of these extending arms would have threatened the stability of the structure if the builders had not sought for equilibrium by inclining the upright timbers of the building proper, giving it the form of a much elongated truncated cone or pyramid. This purely structural precaution produced an effect most subtle, even though perhaps only by chance was the refinement and nicety of line obtained.

Time and nature have been charmingly artistic decorators of these old buildings. The shingles are stained by many bleak storms right off the raging Atlantic. The dull green moss and clinging ivy and clambering woodbine have each added their touches of embellishment. No wonder that the charm and picturesqueness of these old mills have claimed their exemption from destruction and made them favorite haunts as studios and craft shops. They also may have served as a suggestion for that rather common towerlike motive that is often seen in the many pretentious summer mansions that crowd these lovely seashore towns. It may safely be assumed that they have inspired many perspective builders in this section and never fail to be a source of pleasure to all seekers of the quaintly beautiful in building.

RALPH S. FANNING.



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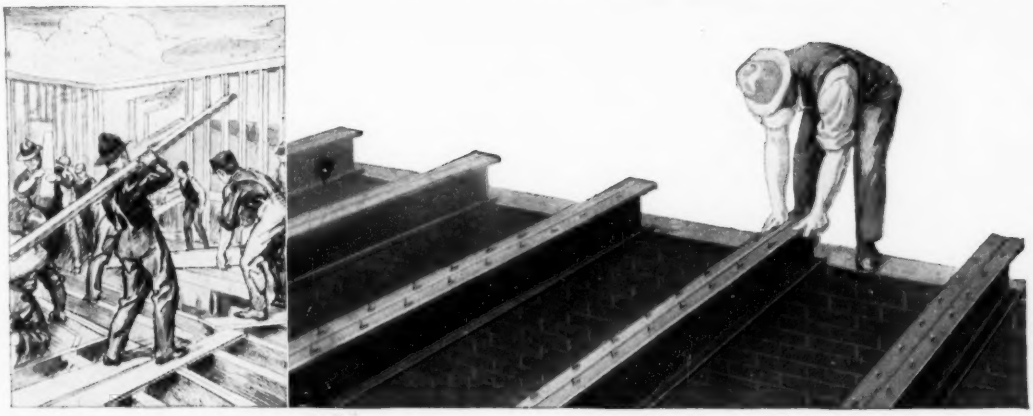

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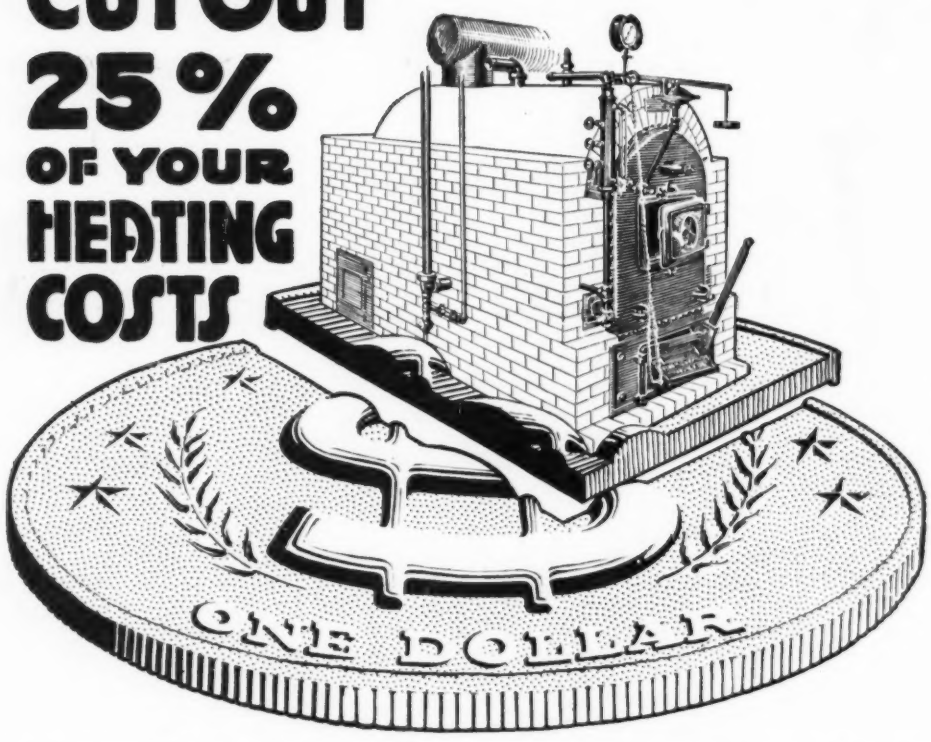

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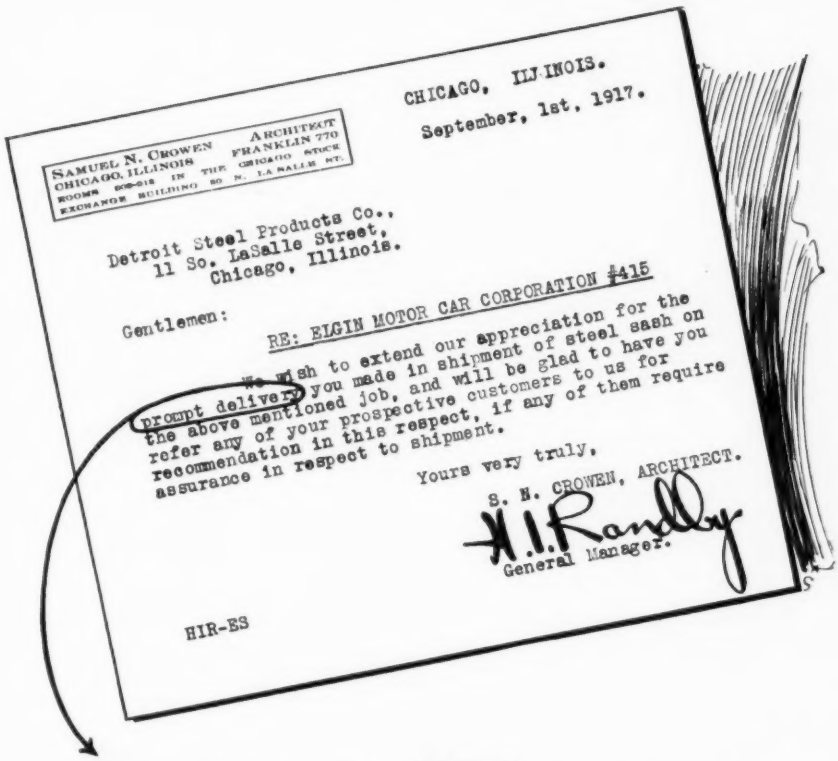

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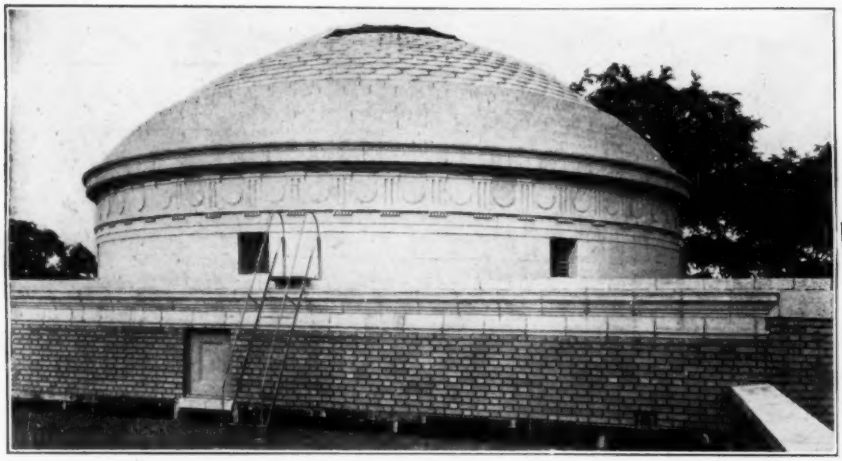

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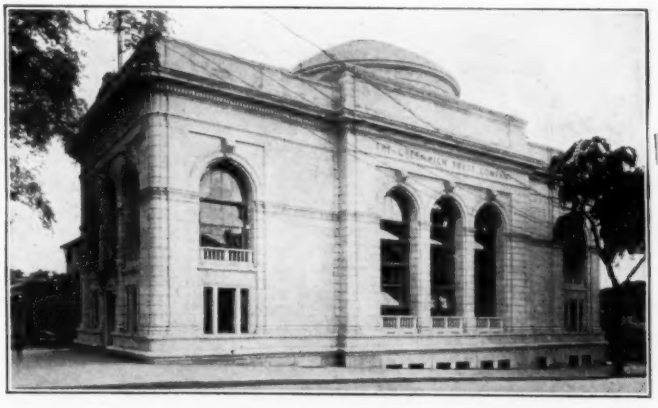

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(No need to mention Economy—*you know it.*)

Nature will never grow another wood as good as OAK for the uses for which it is historically appropriate.

From FILING CABINETS and other Office Furniture to "the bones of great ships"—OAK is **OAK.** (Supreme.)

From delicately carved furniture for the dilettante taste to the sills and ribs of great structures whose nobility is in their sheer strength (and to the historic beams of Westminster Abbey), OAK is **OAK.** (Supreme.)

Without a rival, without an apology, without a substitute, Oak is indeed

"*The* WORLD'S PREMIER HARDWOOD"

(has been, is and ever shall be), AND EVERYBODY KNOWS IT.

When the Government's counsel, and that of all responsible commercial and patriotic bodies, is to "SAVE METAL," the only answer is "USE WOOD"—and it is then that we remember that OAK is "the sturdiest hero of the forests of creation"—and that AMERICAN oak, *of this day, equals the best Oak* known to man's records of forest conquest.

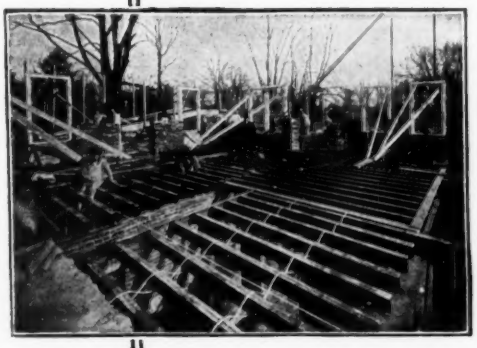
AMERICAN OAK is PLENTIFUL, ECONOMICAL, INDISPENSABLE.

ADMIRE IT. TRUST IT. BUY IT. USE IT. TALK IT. (AND "IMITATE ITS QUALITIES.")

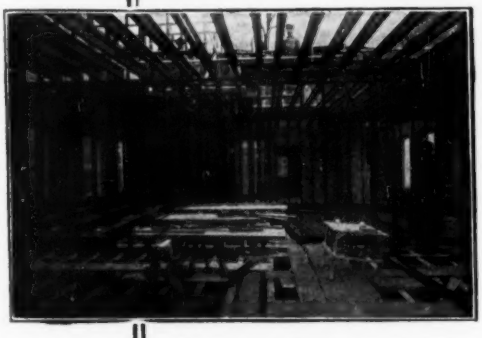
WRITE us. TELL us. ASK us. We may know what you wish to know.
We will give you a straight personal letter in reply—WITH ALL WE HAVE that could (or even that MIGHT) be of either definite value or of casual interest to you.

AMERICAN OAK MANUFACTURERS' ASSOCIATION
ROOM 1401, 14 MAIN STREET MEMPHIS, TENNESSEE

Building in Winter



The Metal Lumber joists are placed as soon as the foundations are ready.



The inner structure proceeds with the walls.

Note the hip type roof formed from Metal Lumber.

Has its advantages—and its problems. One of these is the uncertainty, increased expense and inconvenience of using concrete in freezing weather. The solution for this and for many other building problems is the use of

BERGER'S Metal Lumber

Metal Lumber Joists and Studs come to the job cut to size. They can be placed very quickly as needed, after which the building of the walls can be continued.

This material supplies every need of interior construction—floors, bearing and non-bearing partitions, suspended ceilings and roofs and it is adapted to all types of buildings for the entire inside structure or for any part of it.

As shown in our illustrations it can be used in freezing weather and when the building has been roofed and practically enclosed the finishing materials can be applied to floors, ceilings and partitions.

Send for our Catalog L.A.R. which gives detailed description of this economical and flexible system of fireproof construction; also see Sweet's, pages 244-50.

The Berger Manufacturing Co.

Canton, Ohio

Branches: Boston New York Philadelphia Chicago St. Louis Minneapolis San Francisco

Export Dept.: Berger Bldg., New York City, U. S. A.

BERGER

A WOODWORK OF MODERATE PRICE

WHICH MAY BE STAINED OR ENAMELED WITH THE DEFINITE CERTAINTY THAT THE FINISHED SURFACE WILL RETAIN ITS LUSTRE PERMANENTLY.

UNDER ENAMEL, THE GRAIN WILL NOT RAISE NOR WILL THE WHITE OR TINTED SURFACE BECOME YELLOW OR DISCOLORED.

INSIST UPON TRADE MARKED

ARKANSAS SOFT PINE

AT YOUR LOCAL SOURCE OF SUPPLY

THIS SYMBOL INSURES A CLOSE-GRAINED, FINE TEXTURED, NON-RESINOUS INTERIOR TRIM WHICH WILL SATISFY THE MOST EXACTING CLIENT.

AUTHENTIC PAINTING AND FINISHING BOOK, SAMPLES AND ARCHITECT'S MANUAL ON REQUEST.

ARKANSAS SOFT PINE BUREAU

945 BANK OF COMMERCE BUILDING

LITTLE ROCK ARKANSAS

In That "Particular" Client's Home

Specify and plan for the installation of a

"PITTSBURGH-BUNGALOW"

AUTOMATIC GAS WATER HEATER

He will eventually buy it. Save him time and trouble.

You know water heater values. Why not be frank with your client and explain this fact to him?

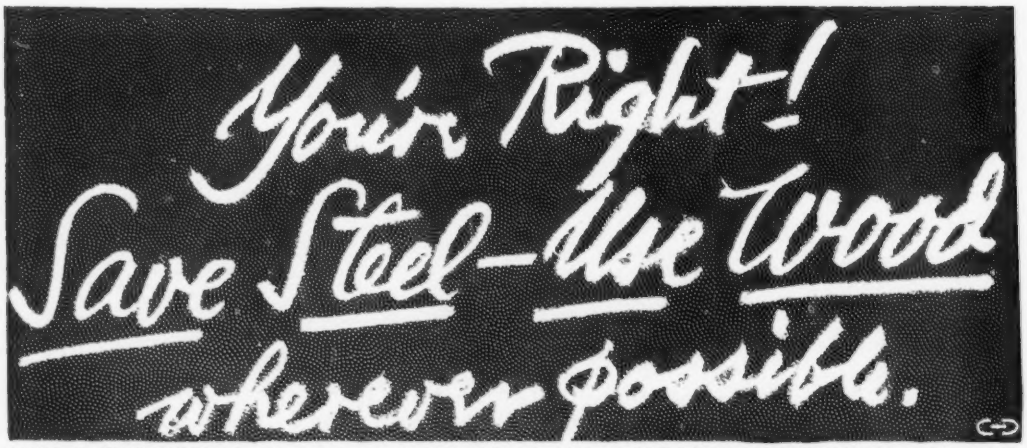
A "Pittsburgh-Bungalow" is the only thermostatically controlled water heater with a capacity of three gallons per minute that sells at a moderate price, and yet is superior to others in performance and purpose.

Our maintenance department takes care of the heater after it has been installed.

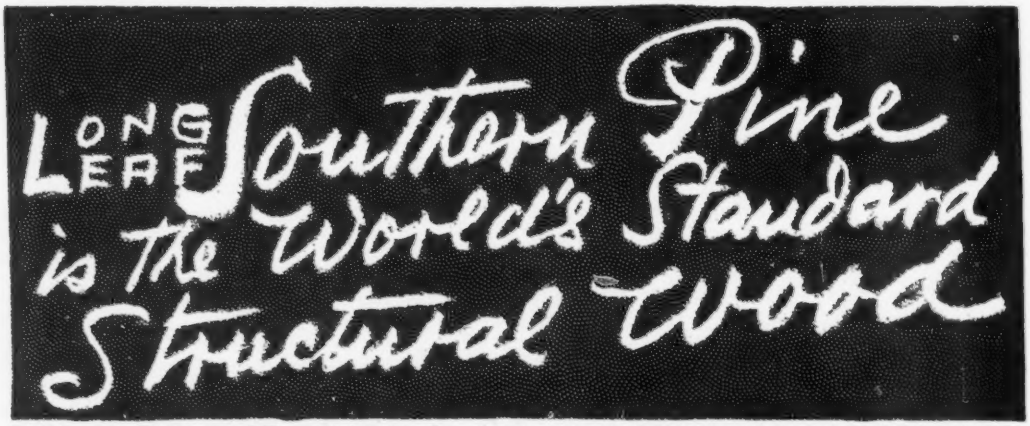
See condensed catalogue in Sweet's, pages 1306-1309

Pittsburg Water Heater Company

PITTSBURGH, PA.



THIS IS THE APPEAL OF THE GOVERNMENT AND PATRIOTIC COMMERCIAL BODIES



THIS IS THE FACT, KNOWN TO ALL WELL-INFORMED BUSINESS MEN

THIS IS THE NAME TO SPECIFY — IF YOU WANT THE BEST — BECAUSE THIS

THIS IS THE VITAL POINT TO REMEMBER. INSIST ON "BOGALUSA" BY NAME.

The Bogalusa Book is interesting—valuable—FREE. Full of pine statistics. Authoritative. Write for it. Tell us your needs. Cutting 1,000,000 feet a day still leaves us time to reply to *you*.

GREAT SOUTHERN LUMBER COMPANY 1602 4th Ave. BOGALUSA, La.

Luxeberry
WHITE ENAMEL
INTERIOR of DINING-ROOM
Home building
stimulates a desire for the beautiful that prompts the selection of Luxeberry Enamels and Liquid Granite.
Luxeberry Enamels in pure white, ivory and three shades of gray are lasting, washable and beautiful. Brilliant or dull effects.
Liquid Granite Floor Varnish is the great general purpose finish. It is water-proof and mar-proof, and is desirable for all interior work where the utmost in durability is wanted.
BERRY BROTHERS
World's Largest Varnish Makers
Established 1858
Factories: Detroit, Walkerville, San Francisco. (623)
Liquid Granite
FLOOR VARNISH

A RED GUM APARTMENT

Bellevue Apartments, Madison, Wisconsin. Charles E. Marks, Architect.

This Apartment Building, while thoroughly modern in its appointments, has had no money needlessly wasted for unnecessary embellishment.

This building is a sensible investor's sensible investment. The interior woodwork, trim and doors are thoroughly satisfactory from the artistic as well as the practical standpoint.

Rich in color, beautiful in figure, this trim is

RED GUM

("AMERICA'S FINEST CABINET WOOD")

and the effect is as fine as though it had been built of rare (or even—at present—unobtainable) foreign cabinet woods. Woods costing much more money could produce no handsomer a result.

Your building should be handsome—but its cost should not be needlessly high.

RED GUM gives the rich, warm atmosphere of refined hospitality, yet keeps well within the wise investor's intent.

ARCHITECTS, OWNERS and CONTRACTORS ARE INVITED to write us for detailed information, adequate (free) samples and lists of important buildings of ALL TYPES wherein RED GUM has given years of eminent satisfaction, both practical and artistic.

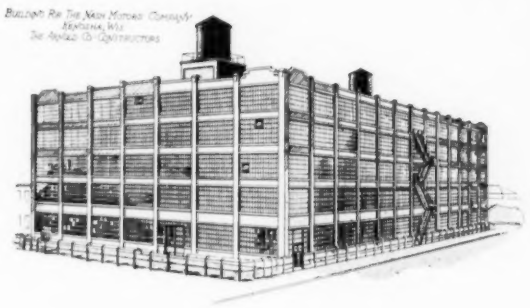
Gum Lumber Manufacturers' Ass'n.

1303 BANK OF COMMERCE BUILDING *MEMPHIS, TENNESSEE*

CONCRETE-STEEL PRODUCTS CO.

STRUCTURAL DESIGN

McCORMICK BUILDING— CHICAGO, ILL.



THE FACTORY ILLUSTRATED IS ONE INTERESTING EXAMPLE OF OUR ECONOMICAL DESIGN-THE BUILDING COSTING LESS THAN TEN CENTS PER CUBIC FOOT IN AN ERA OF HIGH MATERIAL PRICES

OUR ENGINEERING SERVICE INCLUDES THE DESIGNING OF STRUCTURAL STEEL AND ALL CLASSES OF CONCRETE CONSTRUCTION

WE ARE DESIGNING AND CONSULTING ENGINEERS EXCLUSIVELY

WHEN HE WAS A BOY (BOY-LIKE) HE WROTE THIS:

This was when they were shingling their new home, in February, 1867.

46 YEARS LATER, WHEN HE WAS A MAN, HE WROTE THIS:

Southern Cypress Mfrs.' Assn., New Orleans, La. Cotton Plant, Ark., *March 5, 1913.*

Gents: I send you by this mail a sample of shingles placed upon my old homestead by my father in 1867. The pencil writing on same was done by me at the time the workmen put them on. They have done service from that day to the 2nd day of April, 1912, when they were removed for new building.

I can swear to the above. I was then 11 years old. Truly yours, A. F. MABERRY.

(Pretty Good Record?—with the Cypress Shingles Today as Sound as New.)

45 years "on the job"—and still sound as a dollar.

Here is the original of the above letter:

Cotton Plant, Ark., March 5th 1913.

Southern Cypress Mfrs. Ass'n
New Orleans La.

Gents: I send you by this mail a sample of shingles placed upon my old homestead by my father in 1867. The pencil writing on same was done by me at the time the workmen put them on. They have done service from that day to the 2nd day of April 1912 when they were removed for new building.

I can swear to the above. I was then 11 years old.

Truly Yours
A. F. Maberry

"SOME" RECORD. "SOME" INVESTMENT VALUE. SOME REASON FOR 'CYPRESS' PRESTIGE.

How about writing for Volume 7, the SHINGLE BOOK of the Cypress Pocket Library? Also Volume 36, "Short Cuts to Good Carpentry"—a book for Boys and Fathers.

Let our "ALL-ROUND HELPS DEPARTMENT" help YOU. Our entire resources are at your service with Reliable Counsel.

SOUTHERN CYPRESS MANUFACTURERS' ASSOCIATION

1211 Hibernia Bank Bldg., New Orleans, La., or 1211 Heard Nat'l Bank Bldg., Jacksonville, Fla.

INSIST ON TRADE-MARKED CYPRESS AT YOUR LOCAL LUMBER DEALER'S. IF HE HASN'T IT, LET US KNOW.

In World's Finest Newspaper Plant

Two complete units of Sirocco Air Purifying Systems are serving in the new home of the Detroit News—undoubtedly the most modern newspaper plant in existence.

The top illustration at the left shows one of the two Sirocco Fan Outfits. The lower illustration shows one of the two Sirocco Air Purifying Systems.

It was our privilege to co-operate with Architect Albert Kahn, of Detroit, and the General Contractors, George A. Fuller Co., of Detroit, in the application of this Sirocco Equipment.

Our Engineering Department is glad to co-operate with Architects, Engineers and Contractors in connection with Sirocco application.

American Blower Co.

Detroit, Michigan

Branches in all Large Cities

Canadian Sirocco Co., Ltd.
Windsor, Ont.
Manufacturers for Canada

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SPECIFICATIONS

ALL VENTILATORS to be of the ROTARY BALL BEARING type, {Glass top / Metal top} of {galvanized / copper} rust-resisting metal, all interior members of angle iron hot-galvanized after forming and punching. The ventilators to turn sensitively on accurately machined bronze bearings, employing bell metal balls, and counter-weighted on outside. The ventilators to be equipped with outside louver dampers to throw accumulated dirt outside of building, louver to be operated from within by brass chains over brass pulleys. Gauge of metal* to be The Ohio Blower Co., Cleveland, Ohio, Standard, as furnished in Swartwout Rotary Ball-Bearing Ventilators at regular prices. Top of collar and bottom of hood to be stiffened with galvanized angle iron rings.

*If desired, give standard gauge as shown in table of dimensions on Standard Data Card, Sweet's Catalog or Catalog—"The Gospel of Fresh Air."

Follow with specifications for base—(See Data Card, "Sweet's," or catalog).

Send for Catalog
"The Gospel of Fresh Air."

The Ohio Blower Co.

9209 Detroit Ave.
Cleveland, Ohio

Branch offices and agencies in principal cities from coast to coast.

Put the wind to work with

SWARTWOUT ROTARY BALL-BEARING VENTILATORS

Write for Data Card
An 8½x11-in. card, giving fresh air requirements, table of capacities, ventilator and base specifications, etc., in quick reference form. In writing for Data Card use professional letterhead.

Illustration shows the glass-top or "skylight" ventilator with type of base as built in copper. The standard ventilator is of rust-resisting, galvanized sheet metal.

A DIRECTORY FOR ARCHITECTURAL SPECIFICATIONS

Architectural Faience.
Associated Tile Mfrs. Assn., Beaver Falls, Pa.
Rookwood Pottery Co., Cincinnati, O.

Architectural Instruction.
University of Pennsylvania, Philadelphia, Pa.

Architectural Supplies.
American Lead Pencil Co., N. Y. C.
Dixon Crucible Co., Joseph, Jersey City, N. J.
Higgins Co., Chas. M., Brooklyn, N. Y.
National Tracing Cloth Co., Saylesville, R. I.

Awning Cloth.
Boyle, John, & Co., Inc., N. Y. C.

Blowers.
American Blower Co., Detroit, Mich.
Clarage Fan Co., Kalamazoo, Mich.
Ohio Blower Co., Cleveland, O.

Boiler and Pipe Covering.
Johns Manville Co., H. W., N. Y. C.
Magnesia Association of America, N. Y. C.

Bolts—Expansion.
Ankyra Mfg. Co., Philadelphia, Pa.

Brass and Bronze Workers.
Cincinnati Mfg. Co., Cincinnati, O.
Feeley Co., The W. J., Providence, R. I.
Polachek Bronze & Iron Co., John, Long Island City, N. Y.
Smyser-Royer Co., Philadelphia, Pa.
Winslow Bros. Co., Chicago, Ill.

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American Enameled Brick & Tile Co., N. Y. C.
Hydraulic Press Brick Co., St. Louis, Mo.

Bridges—Steel.
American Bridge Co., N. Y. C.

Buildings—Steel.
American Bridge Co., N. Y. C.
Edwards Mfg. Co., Cincinnati, O.

Building Papers.
Johns-Manville Co., H. W., N. Y. C.

Calking and Glazing Compound.
Pecora Paint Co., Philadelphia, Pa.

Casements.
Crittall Casement Window Co., Detroit, Mich.
Hope & Sons, Henry, N. Y. C.

Ceilings—Metal.
Berger Mfg. Co., Canton, Ohio.
Edwards Mfg. Co., Cincinnati, O.
Whitaker-Glessner Co., Wheeling, W. Va.

Cellar Drainer.
Penberthy Injector Co., Detroit, Mich.

Cement.
Atlas Portland Cement Co., N. Y. C.
Lehigh Portland Cement Co., Allentown, Pa.
Sandusky Cement Co., Cleveland, O.

Cement—Caenstone.
Cleveland Builders' Supply Co., Cleveland, O.

Chain Sash.
American Chain Co., Inc., Bridgeport, Conn.
Smith & Egge Mfg. Co., Bridgeport, Conn.

Columns, Floor Supporting.
U. S. Cast Iron Pipe & Fdy. Co., Burlington, N. J.

Columns, Porch, etc.
Hartmann-Sanders Co., Chicago, Ill.
Union Metal Mfg. Co., The, Canton, O.

Concrete Construction—Reinforced.
American Steel & Wire Co., Chicago, New York.
Berger Mfg. Co., Canton, O.
Concrete Engineering Co., Omaha, Neb.
Concrete Steel Products Co., Chicago, Ill.
Corrugated Bar Co., Buffalo, N. Y.
Detroit Steel Products Co., Detroit, Mich.
North Western Expanded Metal Co., Chicago, Ill.
Trussed Concrete Steel Co., Youngstown, O.

Concrete Inserts.
Dayton Malleable Iron Co., Dayton, O.
Security Insert Co., Philadelphia, Pa.

Conduits—Electric.
National Metal Molding Co., Pittsburgh, Pa.
Youngstown Sheet & Tube Co., Youngstown, O.

Copper Boilers.
Badger, E. B., & Sons Co., Boston, Mass.

Cotton Duck.
Boyle, John, & Co., Inc., N. Y. C.

Covering—Pipe and Boiler.
Johns-Manville Co., H. W., N. Y. C.
Magnesia Association of America, N. Y. C.

Cypress.
Stearns, A. T., Lumber Co., Neponset, Mass.
Southern Cypress Mfrs. Assn., New Orleans, La.

Decorations—Plastic Relief.
Decorators Supply Co., Chicago, Ill.
Fischer & Jirouch Co., Cleveland, O.

Door Check.
Standard Mfg. Co., Shelby, O.
Coburn Trolley Track Mfg. Co., Boston, Mass.

Door Hangers.
Reliance Ball Bearing Door Hanger Co., Brooklyn, N. Y.
Stanley Works, New Britain, Conn.

Doors.
American Steel Window Co., Chicago Heights, Ill.
Roddis Lumber & Veneer Co., Marshfield, Wis.
Thorp Fireproof Door Co., Minneapolis, Minn.

Doors—Steel Rolling.
American Steel Window Co., Chicago Heights, Ill.
Edwards Mfg. Co., Cincinnati, O.

Drawing Inks.
Higgins Co., Chas. M., Brooklyn, N. Y.

Electrical Equipment.
General Electric Co., Schenectady, N. Y.
Habirshaw Electric Cable Co., New York.
Hart & Hegeman Mfg. Co., Hartford, Conn.
Hubbell, Inc., Harvey, Bridgeport, Conn.
Johns-Manville Co., H. W., N. Y. C.
National Metal Molding Co., Pittsburgh, Pa.
Simplex Wire & Cable Co., Boston, Mass.
Thordarson Electric Mfg. Co., Chicago, Ill.
Western Electric Co., N. Y. C.
Westinghouse Electric & Mfg. Co., E. Pittsburgh, Pa.

Elevators.
American Elevator & Machine Co., Louisville, Ky.
Otis Elevator Co., N. Y. C.

Enamel—White.
Billings-Chapin Co., Cleveland, O.
Boston Varnish Co., Boston, Mass.
Calman & Co., Emil, N. Y. C.
Devoe, F. W., & C. T. Raynolds, N. Y. C.
Glidden Varnish Co., Cleveland, O.
Murphy Varnish Co., Newark, N. J.
O'Brien Varnish Co., South Bend, Ind.
Pitcairn Varnish Co., Milwaukee, Wis.
Pratt & Lambert, Inc., Buffalo, N. Y.
Smith, Edward, & Co., Long Island City, N. Y.

Engineers—Designing and Consulting.
Concrete Steel Products Co., Chicago, Ill.

Fabrics—Decorating.
Chase & Co., L. C., Boston, Mass.
Cheney Bros., N. Y. C.

Fans.
American Blower Co., Detroit, Mich.
Clarage Fan Co., Kalamazoo, Mich.
Ohio Blower Co., Cleveland, O.

Faucet Manufacturers.
Glauber Brass Mfg. Co., Cleveland, O.

Fireplace and Fireplace Fixtures.
Arnold & North, Inc., N. Y. C.
Chattanooga Roofing & Foundry Co., Chattanooga, Tenn.
Jackson Co., W. H., N. Y. C.

Fireproof Doors, Shutters and Windows.
Crittall Casement Window Co., Detroit, Mich.
Detroit Steel Products Co., Detroit, Mich.
Hope & Sons, Henry, N. Y. C.
Thorp Fireproof Door Co., Minneapolis, Minn.
Trussed Concrete Steel Co., Youngstown, O.

Fireproofing.
See:
"Concrete Construction."
"Columns—Floor Supporting."
"Concrete Inserts."
"Covering, Pipe and Boiler."
"Fireproof Doors, Shutters and Windows."
"Lath—Metal."

Advertisements in this issue, of the above manufacturers, are indexed on page 18.

LOWELL BLEACHERY, LOWELL, MASS. Covered with a Barrett Specification Roof. Planned and constructed by Robinson & Robinson, Lowell, Mass.

No Building Is Better than Its Roof—

TO demonstrate our confidence in Barrett Specification Roofs we now *guarantee them for twenty years.*

This guarantee means that owners of buildings are exempt from all expense of maintenance or repairs for that period.

This protection is absolute because it is covered by a Surety Bond issued by the U. S. Fidelity & Guaranty Company, one of the largest surety companies in America.

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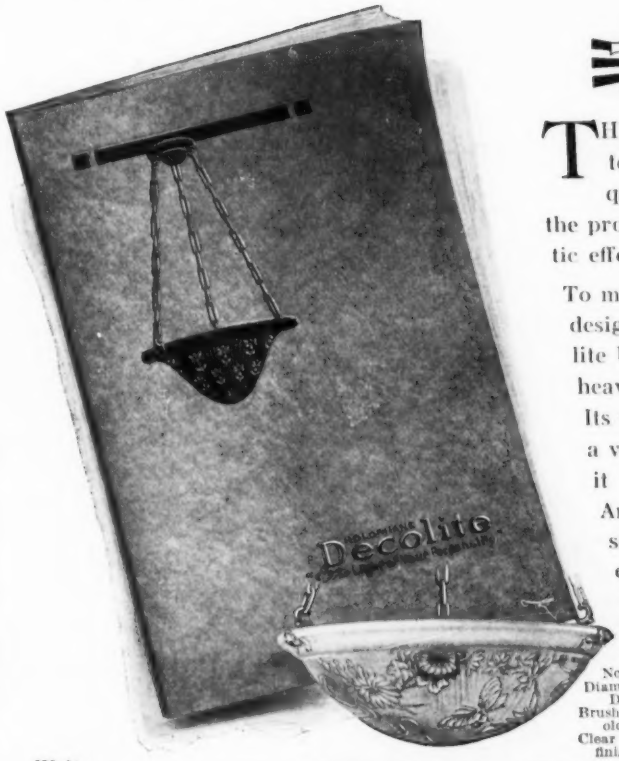

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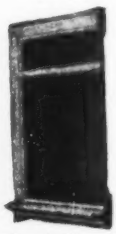

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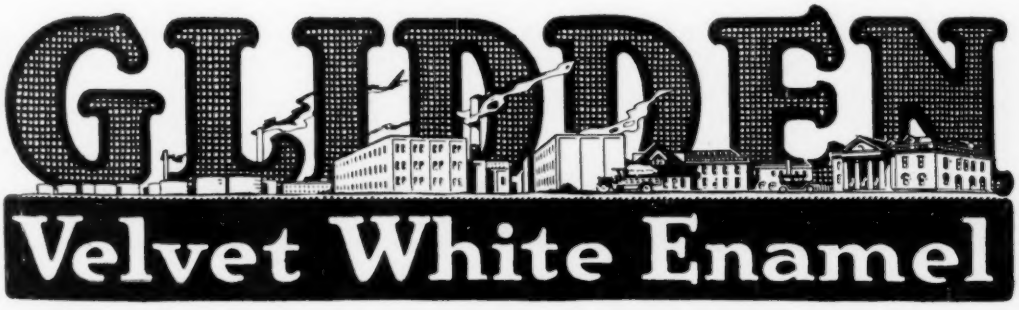

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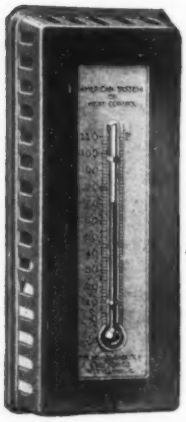

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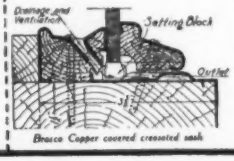

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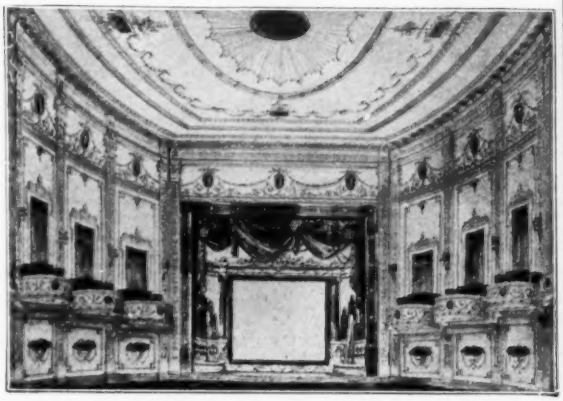

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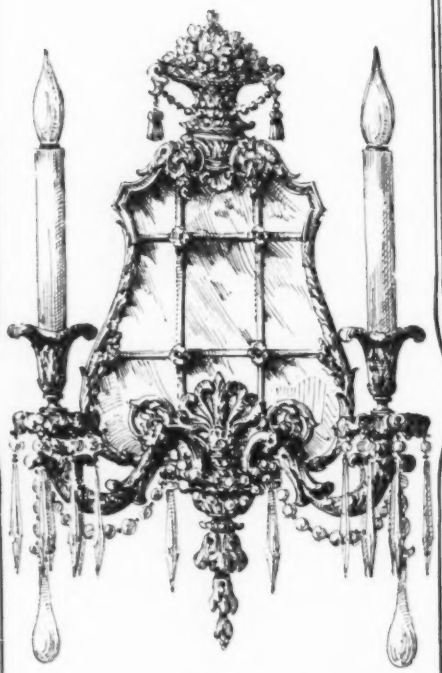

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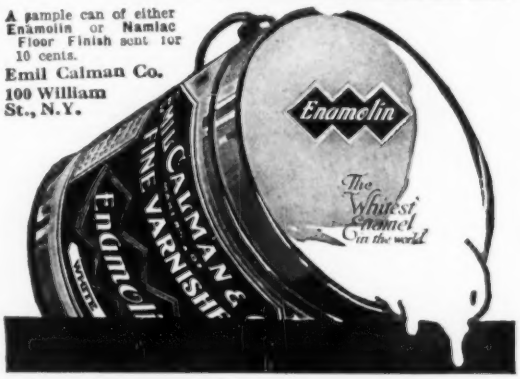

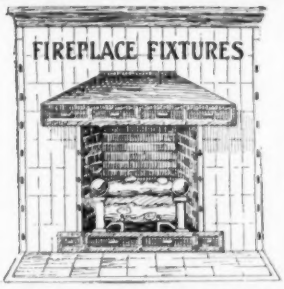

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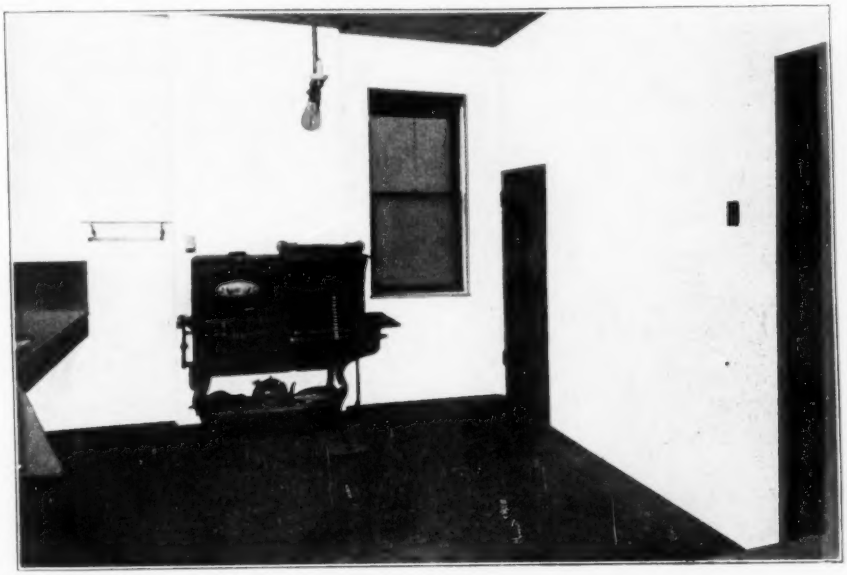

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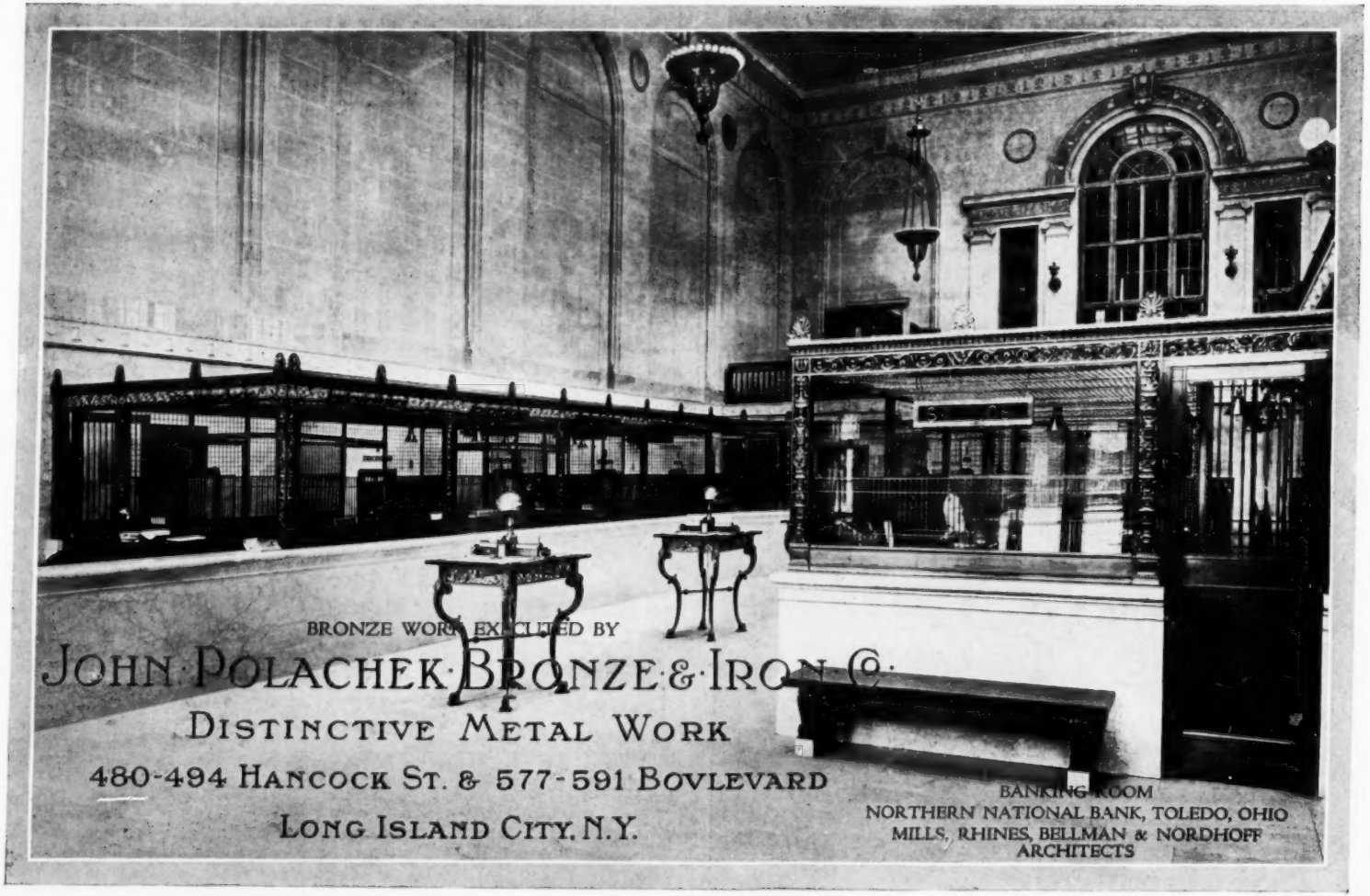
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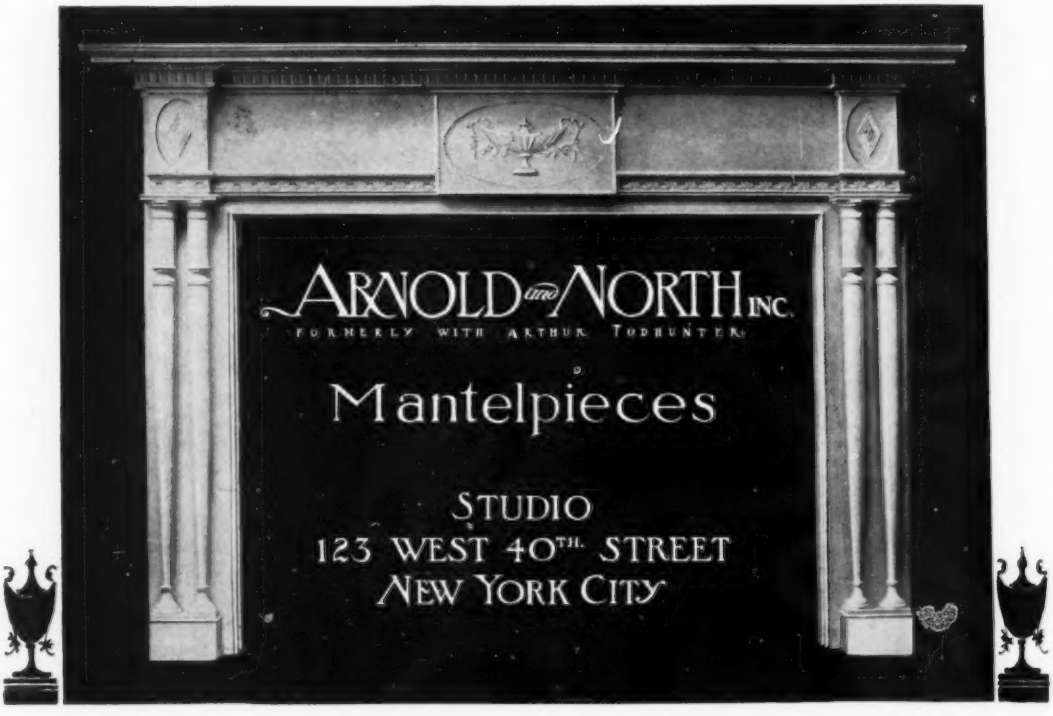

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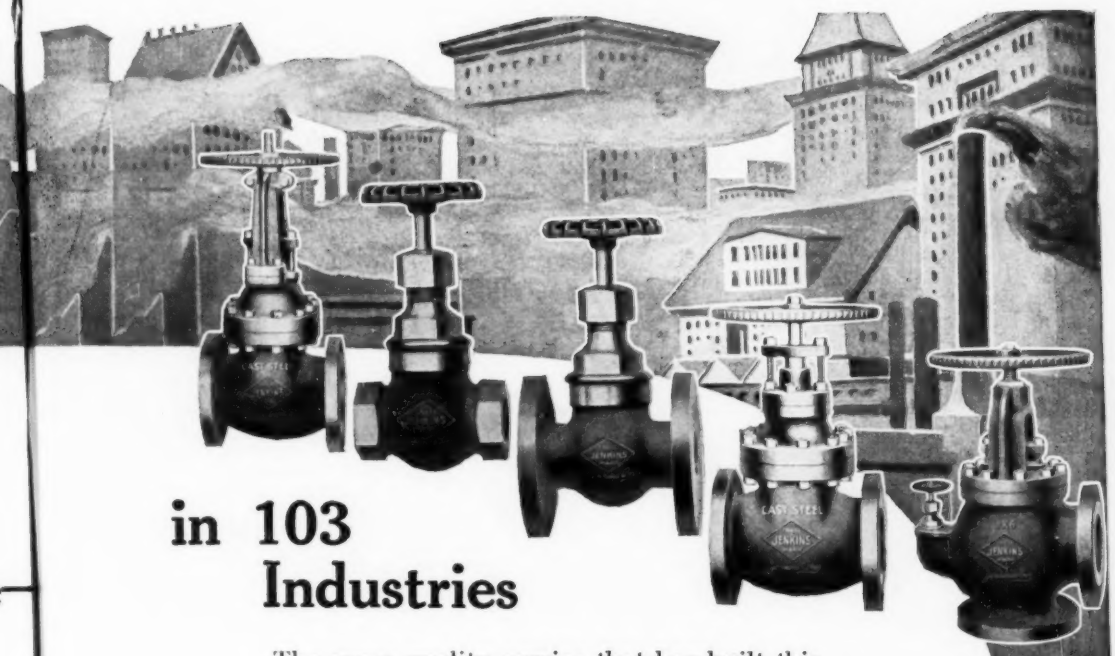

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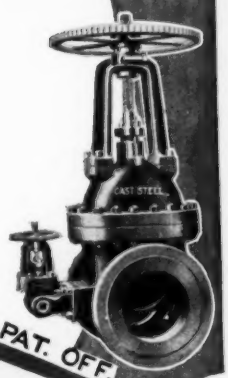

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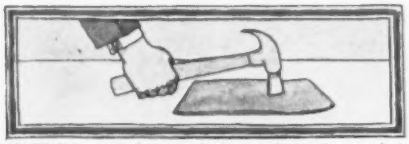
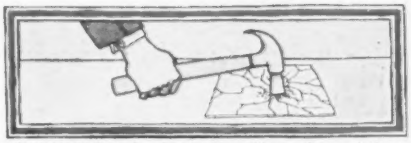


NOTHING — your hammer leaves no impression — why? Because rubber is *elastic*. And it is the *elasticity* of "61" Floor Varnish that makes its life so long. Send for a sample panel. Test it yourself. Examine the dented wood and the unbroken varnish film. Then think of the heel-blows that your clients' floors are called upon to endure, and you will see the *logic* of specifying on your work a floor varnish of which you can be *certain*.

Hammer a Sheet of Glass And What Happens?



WRECKAGE — the glass is shivered into a thousand pieces — why? Because glass is *brittle*. And this in a lesser degree, is what you have seen happen to countless floors finished with ordinary varnishes which crack, check and chip off. A good varnish doesn't break off — it wears off — *slowly*. Such a varnish — "61", for instance, — will be a credit to your discernment throughout its long life. Specify "61" — *it will not fail you.*

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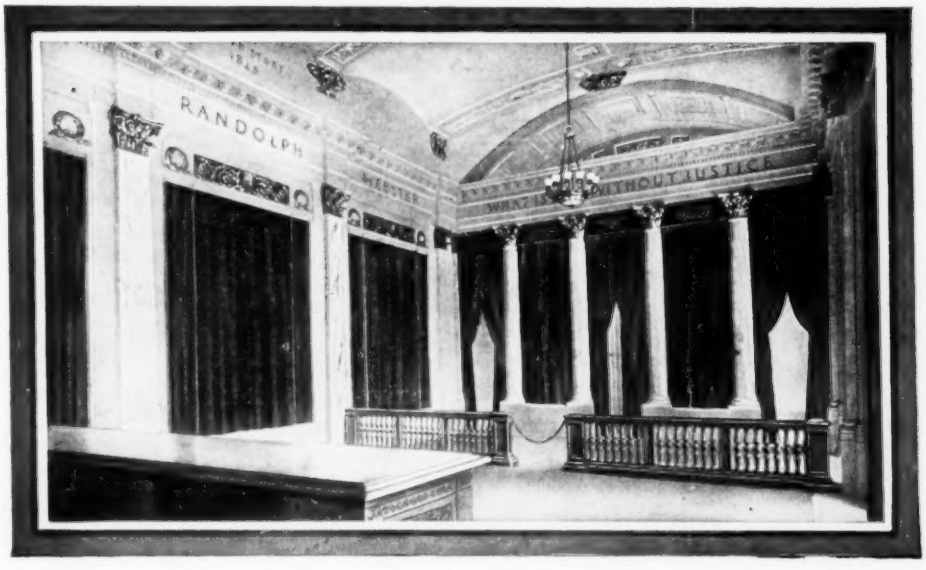

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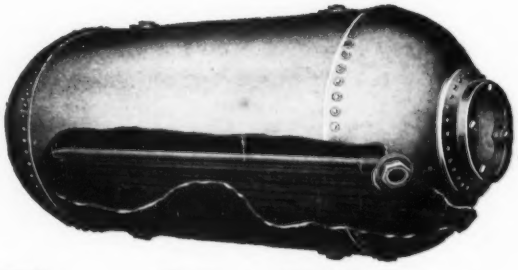

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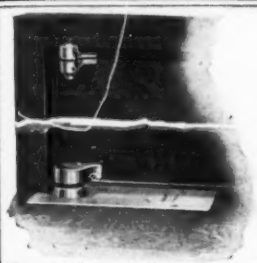

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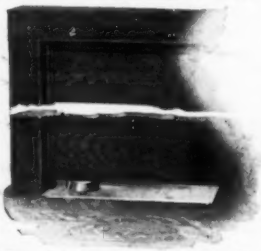
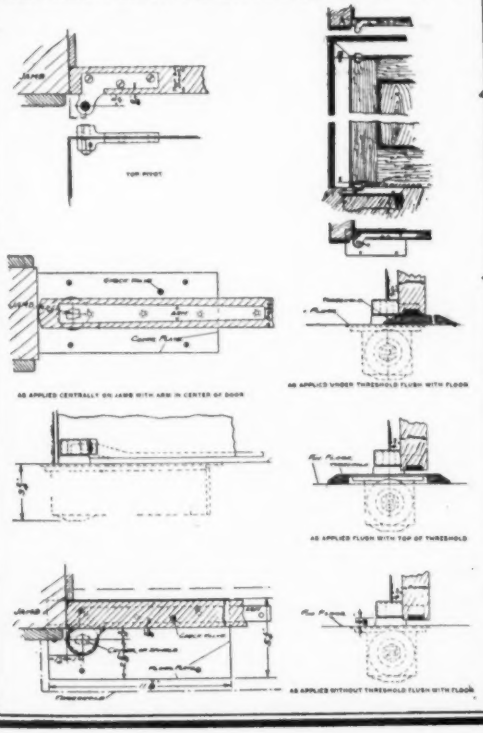


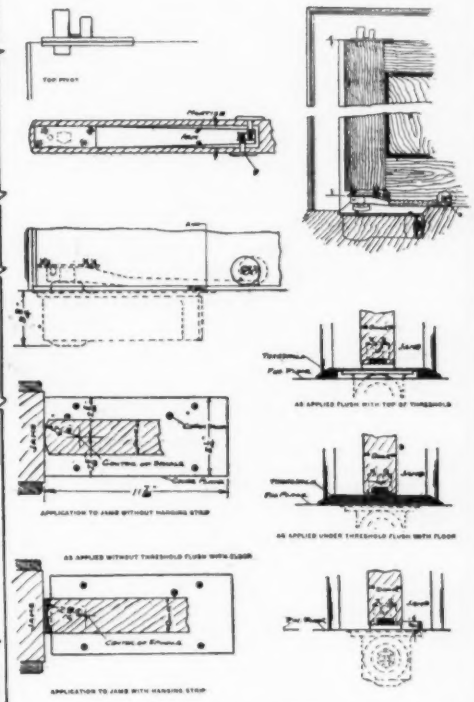
Mortise Pivot

Double Acting Hinge Applied

DETAILS FOR APPLICATION, HINGE No.13



DETAILS FOR APPLICATION, HINGE No.23



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Target and Arrow Roofing Tin

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ROOFED with 20,000 sq. ft. of TARGET AND ARROW tin, by Jno. G. Hetzell & Son, roofers, Baltimore.

The roofing is applied with standing seams, giving a ribbed effect, and is painted a light gray color.

Do not overlook the possibilities of attractive color effects in using tin roofing. In the past tin roofing was seldom thought of as having any artistic merit. Nowadays standing seam or heavy ribbed types of tin roofing—either with large or small ribs, rounded or square—colored to harmonize with the general color scheme of the building, give a roof of character and distinction for any class of building.

The first coat of paint for a tin roof should be one of the kinds approved by the National Association of Sheet Metal Contractors, i. e., metallic brown, Venetian red, red oxide or red lead, with pure linseed oil and very little, if any dryer. Over this first coat any color can be applied, for instance—a gray lead color, to simulate the weather-beaten appearance of the lead roofs of old English cathedrals; a light green to give the appearance of old copper; or a nut brown color for a remarkably rich effect. For a red brick building, try dull green or soft gray. Even if the entire roof of the building is of some other material, such as slate, tile, etc., the tin flashings, open valleys, etc., should be painted to harmonize in color with the rest of the roof.

A good tin roof deserves a coat of paint every four or five years to repair the ordinary wear and tear of the weather and to keep it in perfect condition. This repainting also affords an opportunity to freshen up the color.

A list of color suggestions is given on "Service Sheet" No. 4, Index No. 18, issued by the Architectural Service Corporation of Philadelphia.

Description of this product will be found in Sweet's Architectural Catalog—all editions.

N. & G. TAYLOR CO., of Philadelphia

HEADQUARTERS FOR GOOD ROOFING TIN SINCE 1810

War and Concrete

War conditions call sharp attention to the efficiency, economy and above all to the availability of reinforced concrete for industrial buildings. In the increased industrial activity of today, factories and foundries can't keep up with orders, railroads and other carriers are clogged with freight.

But materials for concrete construction are easily secured; the construction is economical, durable, sanitary, fire-proof and, above all, quick.

The leaders of American industry are seeing, more and more, the value of good design. And concrete, the supremely efficient material, has rare possibilities of simple dignified architectural treatment.

For the architect who devotes himself to the problems of good design in reinforced concrete there is a double reward—much business to do, and notable architectural values to be wrought.

Atlas service to architects

Our Technical Department will gladly furnish data and statistics and will co-operate upon request in developing designs and economical layouts. Architects are invited to write for our free book on Industrial Buildings and to avail themselves of the service of our Technical Department. Use the coupon below.

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Member of the Portland Cement Association

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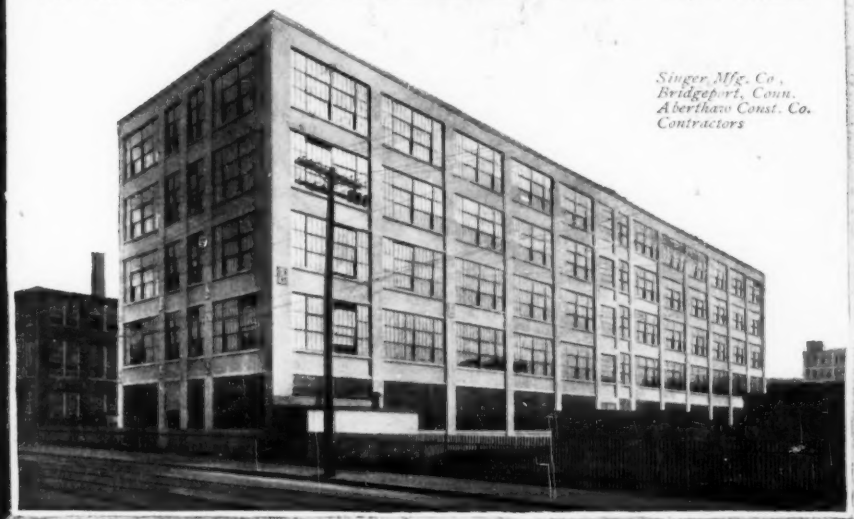

Singer Mfg. Co., Bridgeport, Conn. Aberthaw Const. Co. Contractors

ATLAS CEMENT

THE ATLAS PORTLAND CEMENT CO., 30 Broad St., N. Y., or Corn Exchange Bank Bldg., Chicago. Send book on Industrial Buildings and information about Atlas Service to name and address written on margin, particularly subjects checked:

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If you will state kind of business for which building is intended_____special information will be furnished

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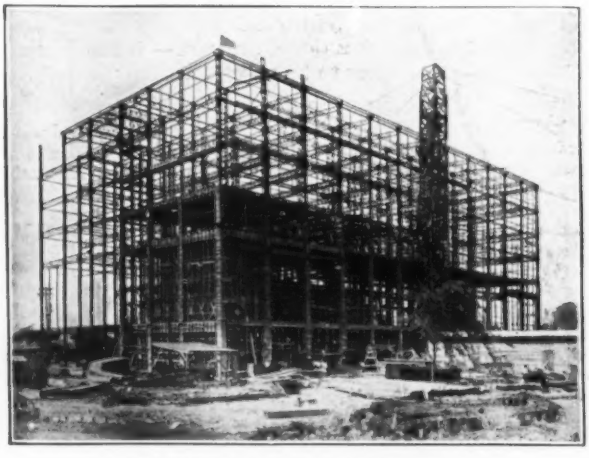

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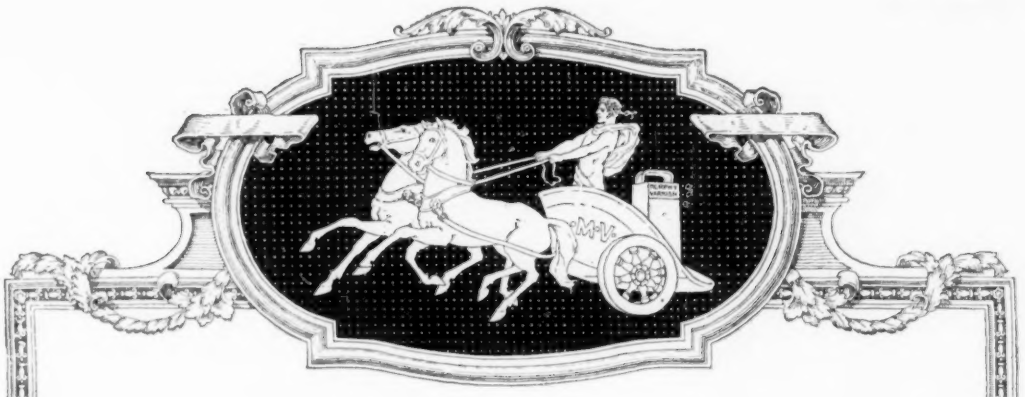

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When architects specify Murphy Varnish and enforce its use they put a genuine signature to their work, to the product of their skill, to all that represents their conscientious service to their clients.

To treat their creations with inferior finish, to permit cheap varnish to cover and soon ruin them, to leave the job to those who have no enduring interest in it, is like abandoning a child to shift for itself.

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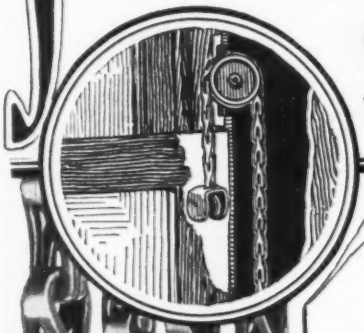
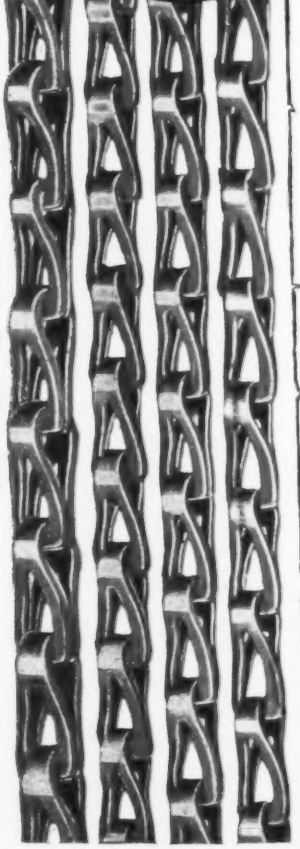
AMERICAN Sash Chain





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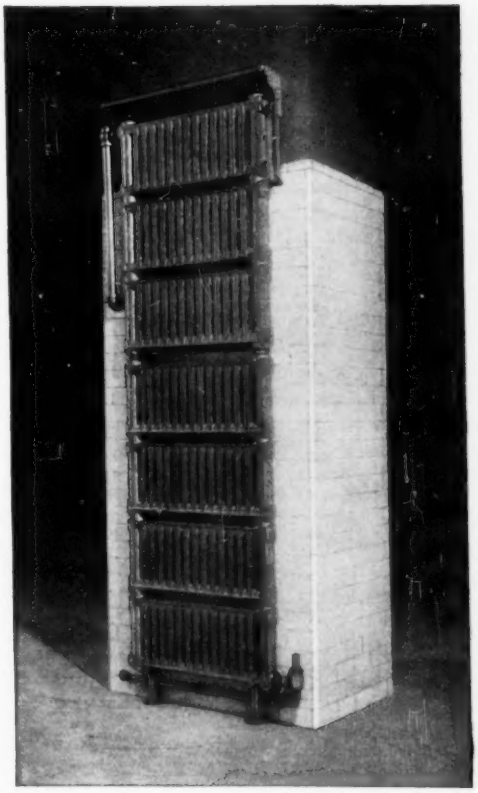

A clever arrangement of AMERICAN Rococo Wall Radiators on a column

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can be erected on walls, ceilings, skylights, in narrow passage ways, basements, around windows and on girders—in fact in any space which cannot be used for anything else. Easily erected in small units and capable of quick re-arrangement. When weather is mild the units can be shut off, thus preventing waste and over-heating.

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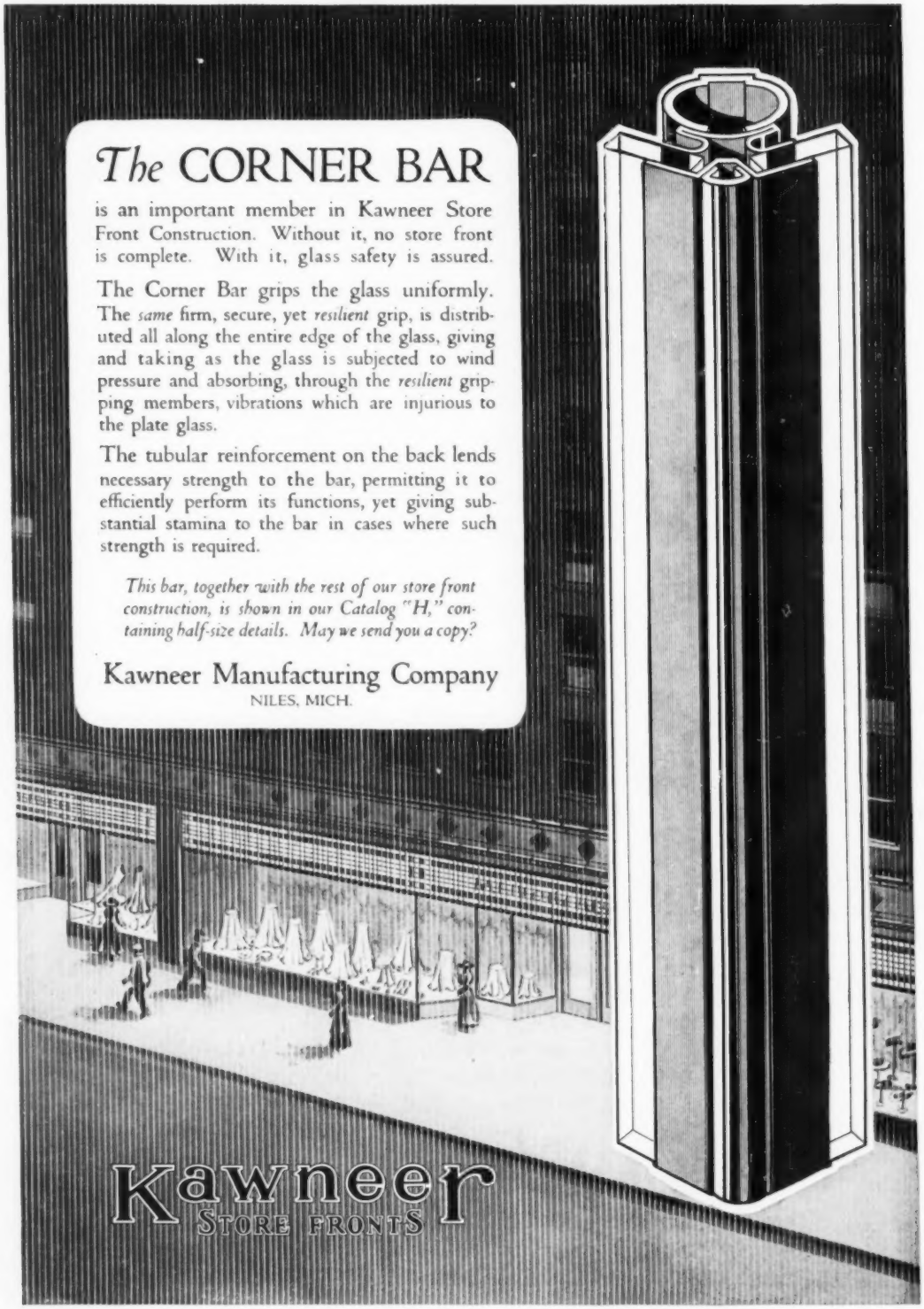
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is an important member in Kawneer Store Front Construction. Without it, no store front is complete. With it, glass safety is assured.
The Corner Bar grips the glass uniformly. The *same* firm, secure, yet *resilient* grip, is distributed all along the entire edge of the glass, giving and taking as the glass is subjected to wind pressure and absorbing, through the *resilient* gripping members, vibrations which are injurious to the plate glass.
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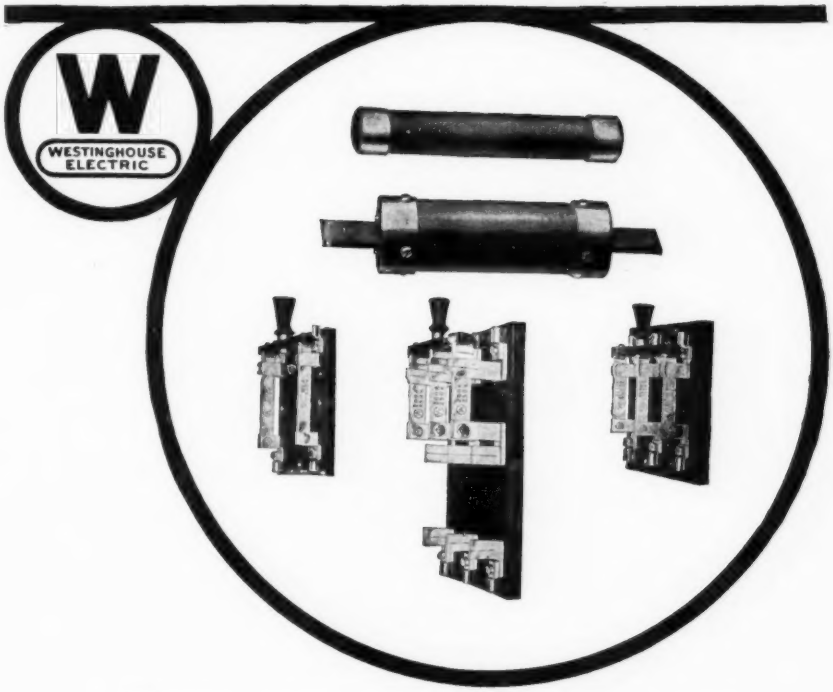

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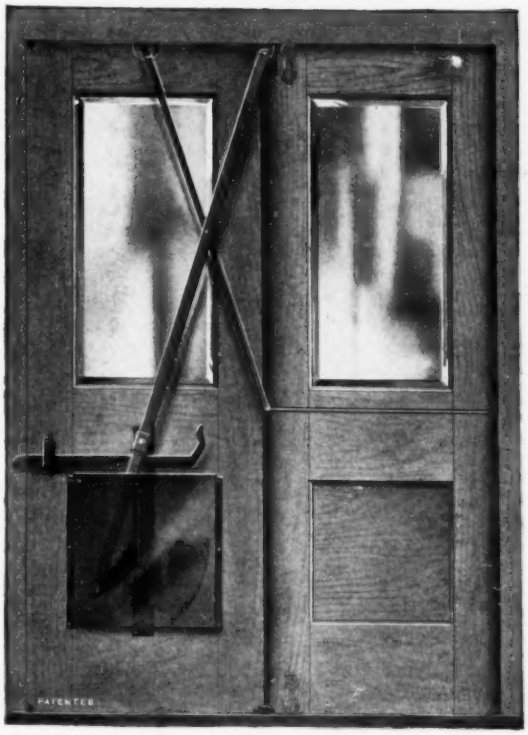

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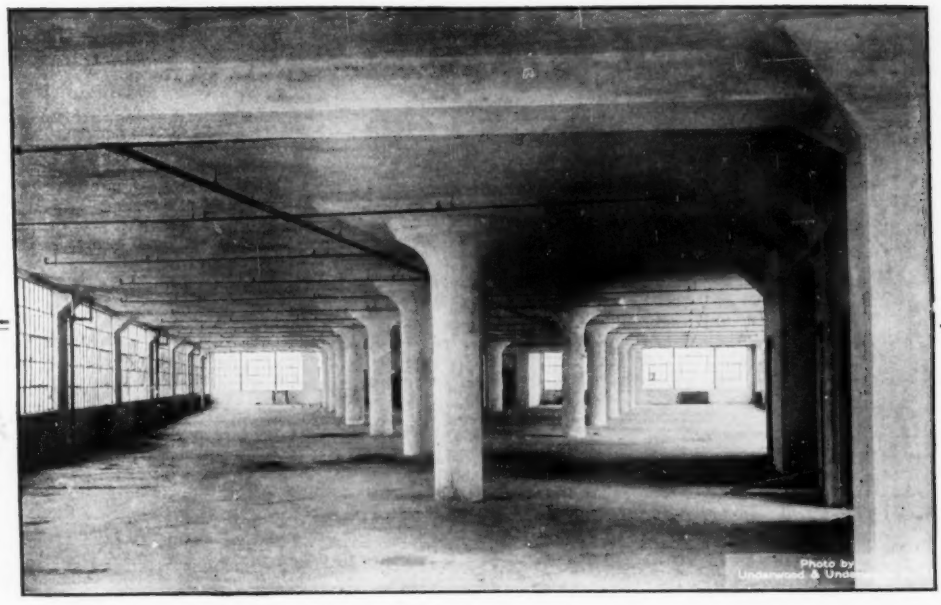

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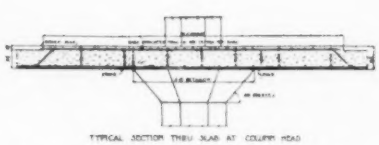

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As used in Dodge Bros.' Machine Shop, Detroit, Mich.

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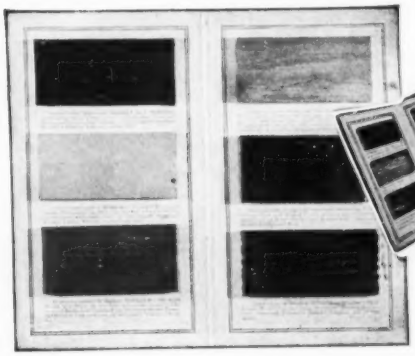

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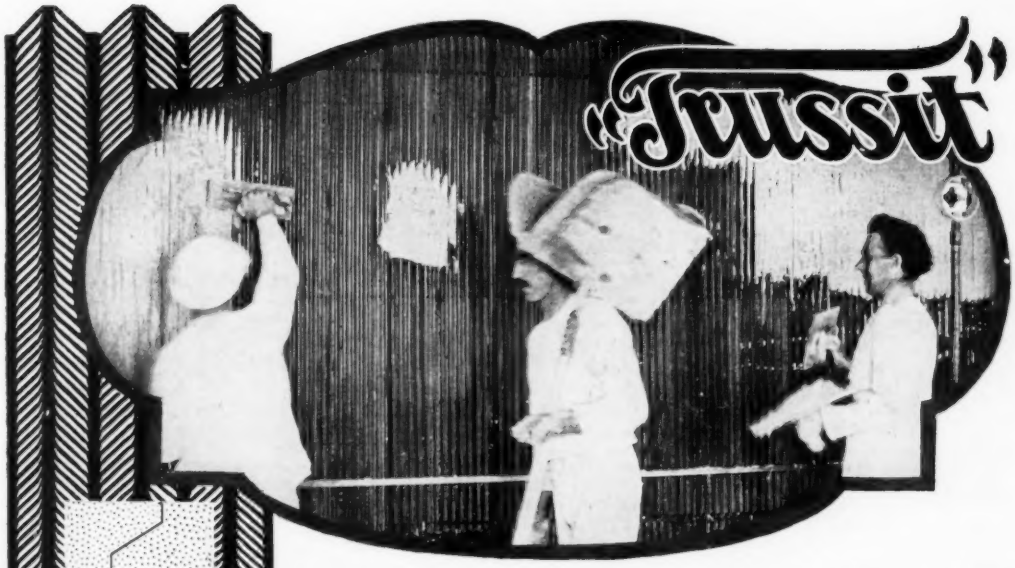
Stain with Bridgeport Standard Dark Mahogany Penetrating Stain; give a coat of Bridgeport Standard Mahogany Primer, and finish with Bridgeport Standard Wheeler's Interior Varnish, rubbed flat.



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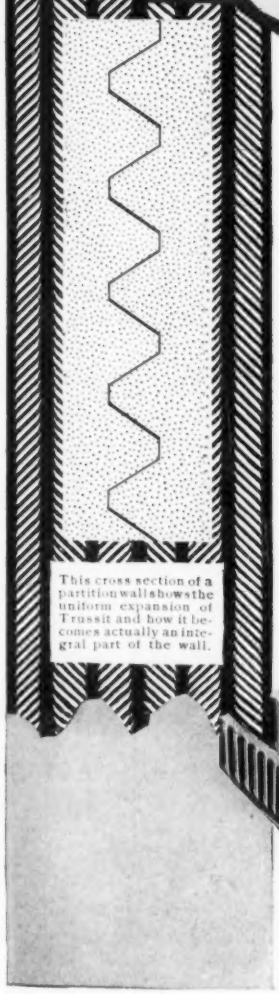
A large and ever-increasing number of architects, engineers, and contractors are using Trussit for solid partition and curtain wall work. Do *you* know its time-, labor-, and money-saving qualities?

Trussit is a corrugated steel sheet uniformly expanded in both directions. In the finished wall it is so interwoven back and forth through the cement or plaster that it is not a mere backing for the wall, but an integral part of it. Uniform distribution of the metal overcomes any tendency toward expansion or contraction in any one general direction.

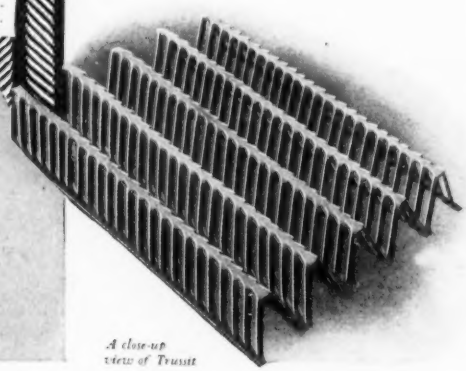
Trussit eliminates entirely permanent studding and permits of the erection of partitions two inches in thickness, space saving, fire-retardent, and wonderfully rigid. It forms a curtain wall equal to brick or poured concrete at a fraction of their cost.

Trussit is easily erected and plastered. The large sheets need merely be set in place, fastened at floor and ceiling; a simple, temporary bracing is placed on one side and the first coat of plaster applied. The plaster that is pushed through the Trussit forms the basis for the coat on the opposite side.

Trussit is used as a reinforcement for walls of small frameless buildings; for stucco exterior walls in wood frame structures; for stair and elevator enclosures and numberless miscellaneous fire-proofing purposes.



This cross section of a partition wall shows the uniform expansion of Trussit and how it becomes actually an integral part of the wall.



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It is a unique and practical material, always centered in the wall and reinforcing equally both sides. If you have never used Trussit, let us send you a sample and a copy of the Trussit Handbook which shows its use in detail.

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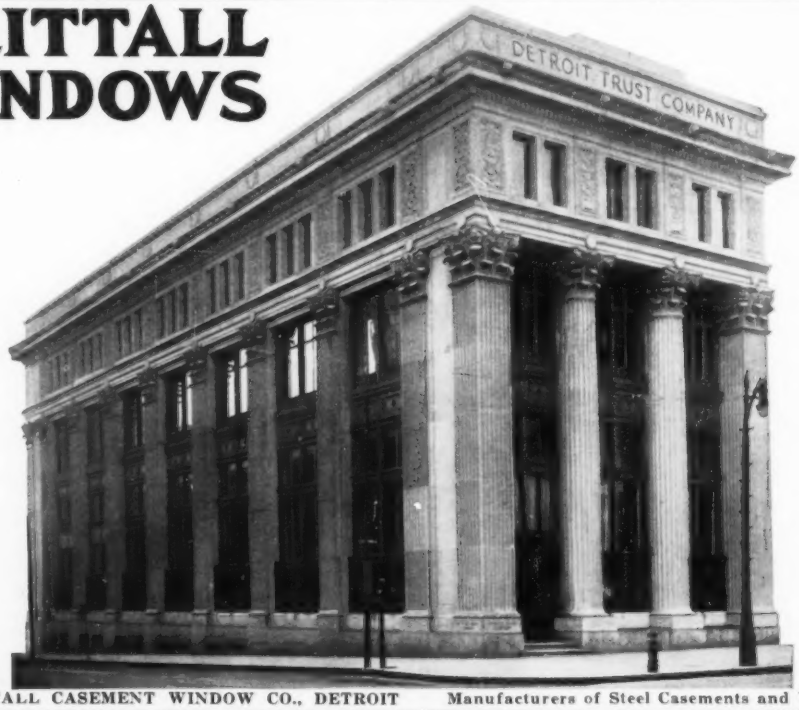

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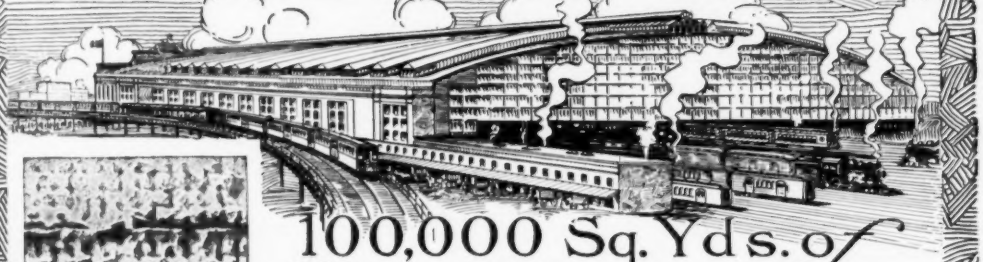
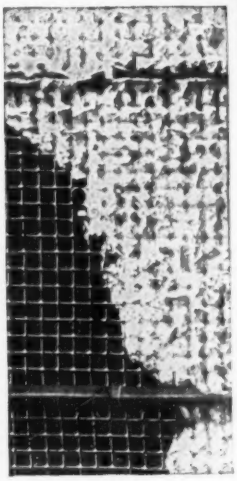
THE TEST OF TIME





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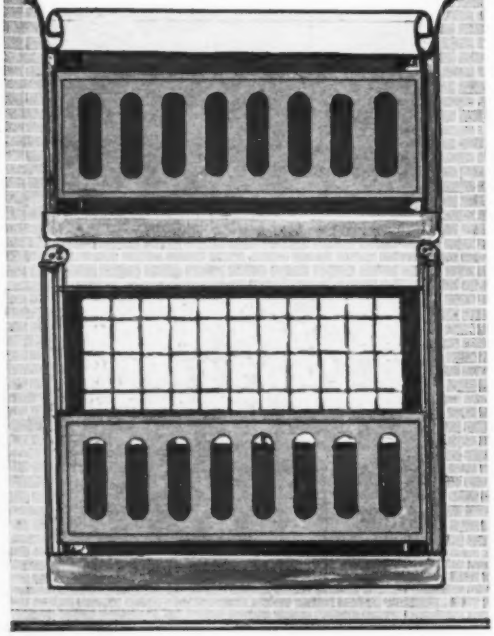

WATER PAINT
INFORMATION

THE *best* water paints are caseinous cements and are intended solely for whitening or coloring the ceilings, walls, and pillars of factories, mills, warehouses, sheds and garages. They adhere strongly to cement, concrete, hollow-tile, brick, wood and wallboard. They produce snow-white effects which do not darken with age, are excellent fire-retardants and are inexpensive.

They are cheaper than any kind of oil paints, just as durable and are much superior to whitewash.

The *best* water paints are called PERMANITE, "*FOX'S PERMANITE*." Specify them and insist upon their proper use.

See "Sweet's" or write us.

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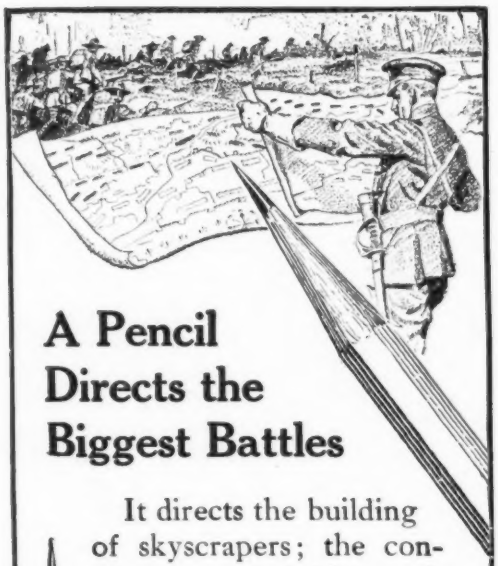

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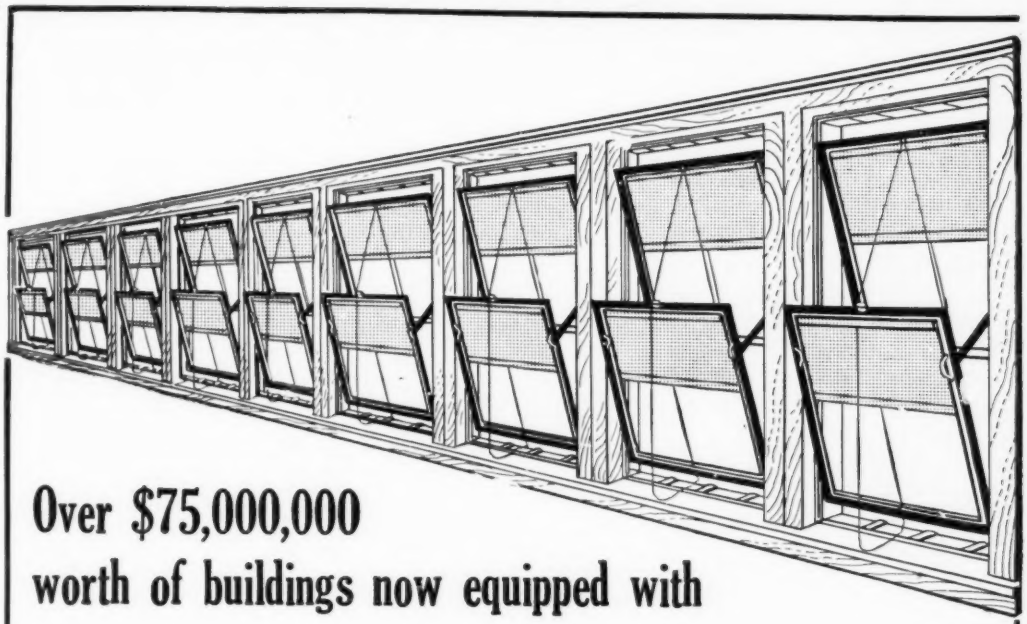

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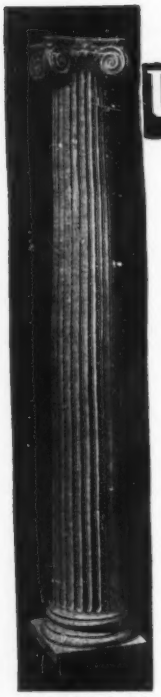

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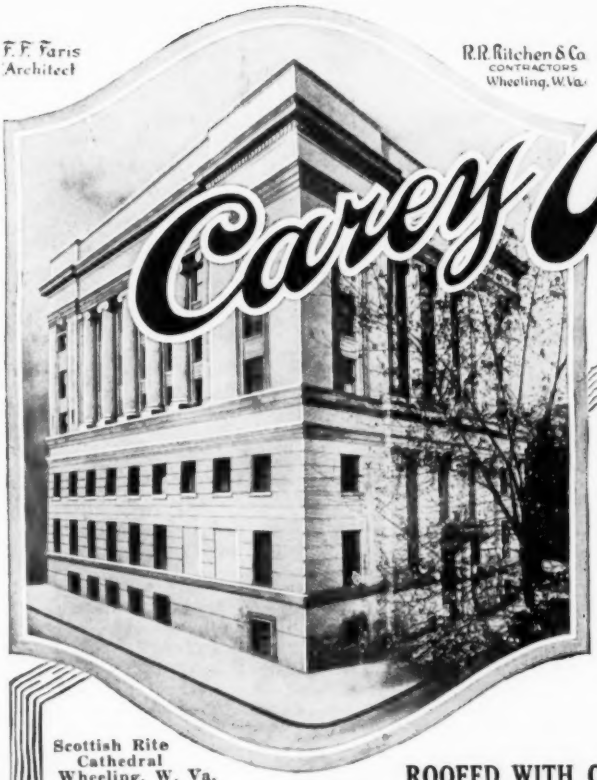

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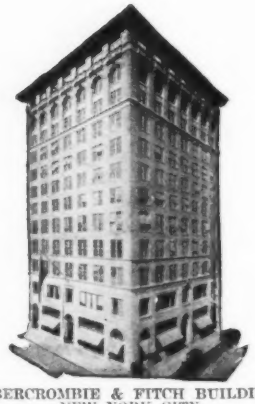

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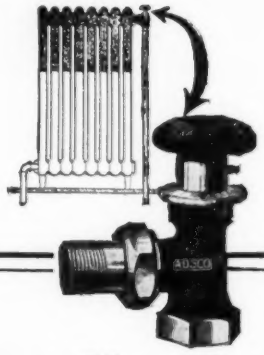

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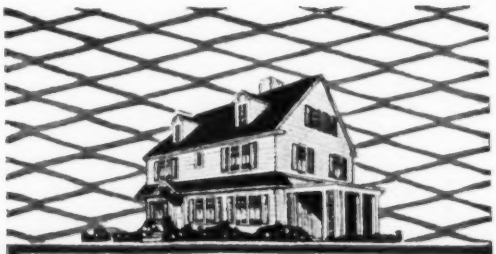

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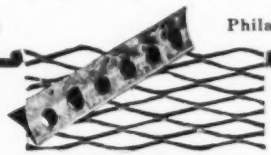

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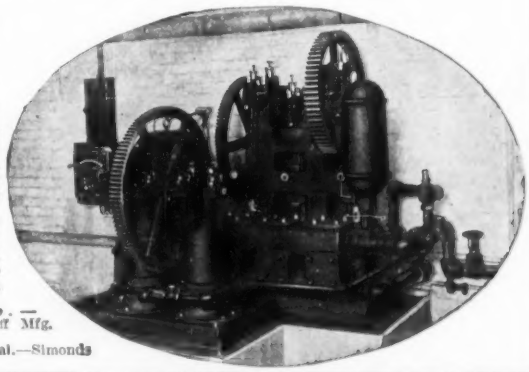

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STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACT OF CONGRESS OF AUGUST 24, 1912, OF THE ARCHITECTURAL RECORD, published monthly at New York, N. Y., for October 1, 1917.

County of New York }
State of New York } ss.:

Before me, a Notary Public in and for the State and county aforesaid, personally appeared F. T. Miller, who, having been duly sworn according to law, deposes and says that he is the President of the Architectural Record Company, Publishers of the Architectural Record, and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management, etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in section 443, Postal Laws and Regulations, printed on the reverse of this form, to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business managers are:

Publisher—Architectural Record Company, 119 West 40th Street, New York, N. Y.

Editor—None.

Managing Editor—M. A. Mikkelsen, 119 West 40th Street, New York, N. Y.

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2. That the owners are:

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3. That the known bondholders, mortgagees and other security holders owning or holding 1 per cent. or more of total amount of bonds, mortgages, or other securities are: None.

4. That the two paragraphs next above giving the name of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company, but also in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest, direct or indirect, in the said stock, bonds, or other securities than as so stated by him.

F. T. MILLER,

President of the Architectural Record Company, Publishers of the Architectural Record.

Sworn to and subscribed before me this 28th day of September, 1917 (Seal) HENRI DAVID,

Notary Public No. 196, N. Y. County Register's No. 8165.

(My commission expires March 30, 1918.)

Geo. B. Rhinefrank, Architect *B. F. Laird, Builder*

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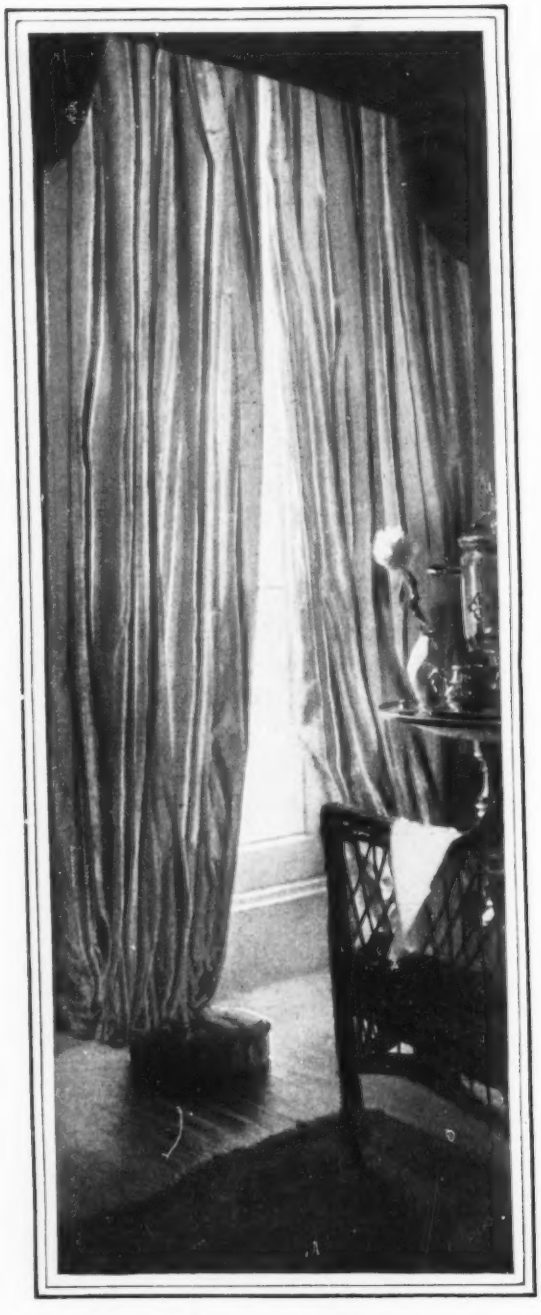

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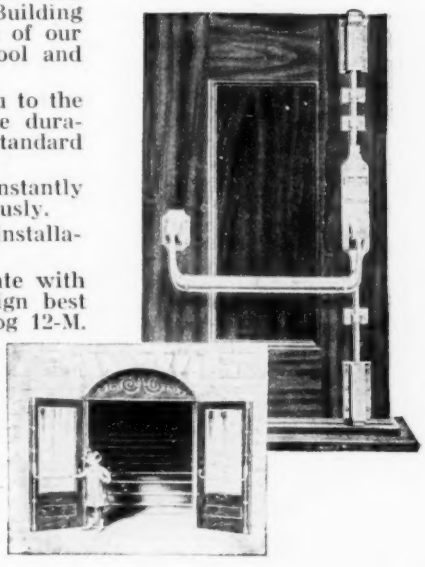

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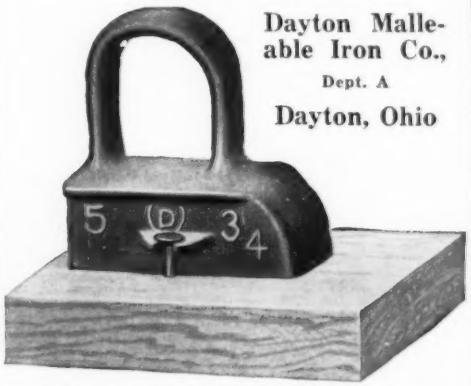

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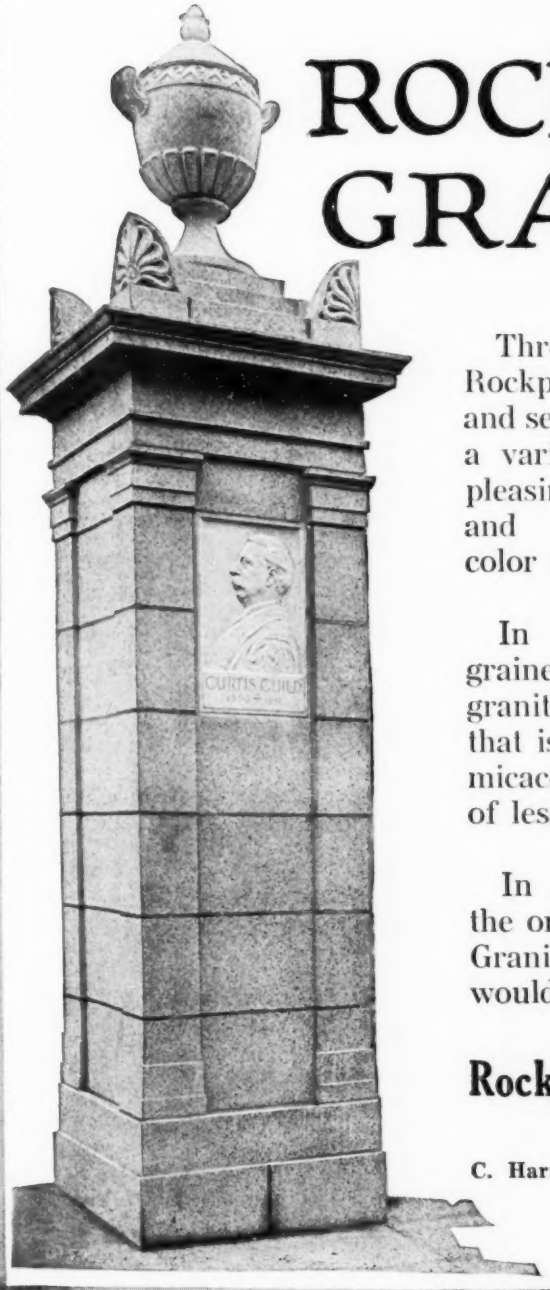

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COMPETITION ANNOUNCEMENT

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That a Competition has been instituted for the selection of an Architect to design and supervise the construction of State Buildings to be located in the City of Sacramento, California, for the construction, equipment and furnishing of which the people of the State of California have voted $3,000,000.00 in bonds, the site having been donated by the City of Sacramento.

Under the law, the State Architect shall act as architectural advisor in connection with the Competition.

This Competition will be conducted in two stages.

The first stage is open to all Architects, citizens of the United States who have had the necessary experience, subject to the conditions prescribed in the Program of the Competition.

The second stage will be open to eight Architects selected by the Jury from those competing in the first stage.

No Competitor shall receive any remuneration unless chosen by the Jury and submitting drawings in the second stage.

The Program for this Competition is approved by the San Francisco Sub-Committee on Competitions of the American Institute of Architects.

Architects desiring to compete must file with George B. McDougall, State Architect, Forum Building, Sacramento, California, a written request for a copy of the Program. On December 15, 1917, copies will be mailed simultaneously to all Architects from whom written requests for same have been received. Copies will be mailed to Architects making written requests for same after December 15, 1917, at the time of the receipt of such later requests.

(Signed) BOARD OF CONTROL
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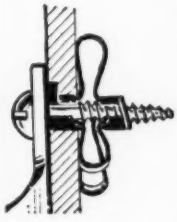

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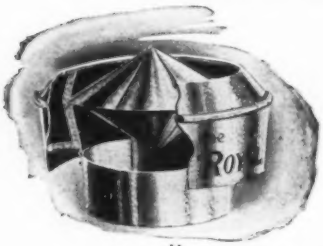

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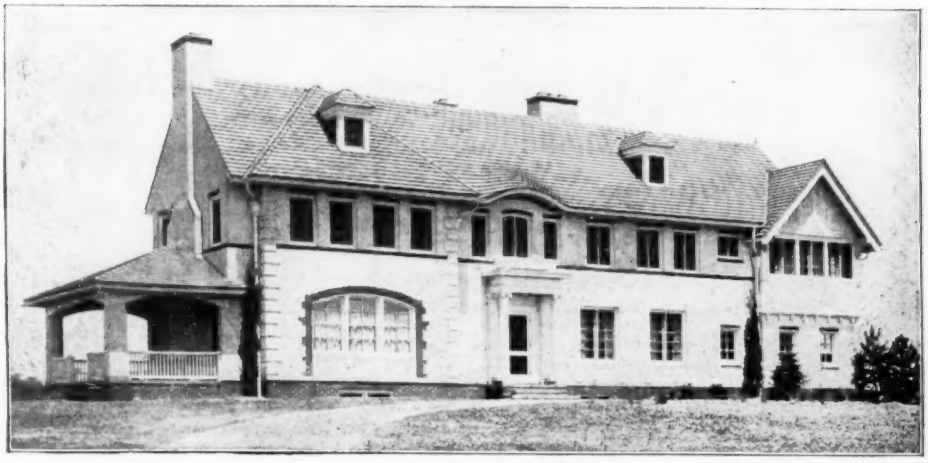

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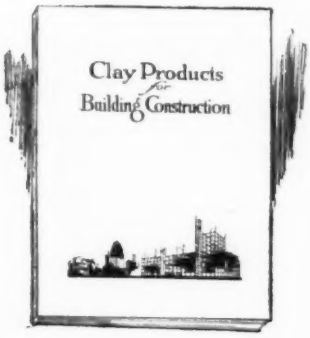

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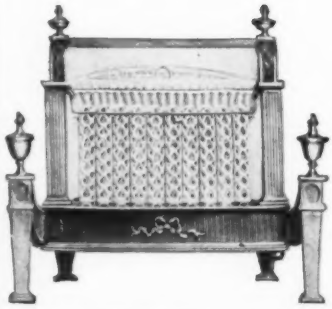

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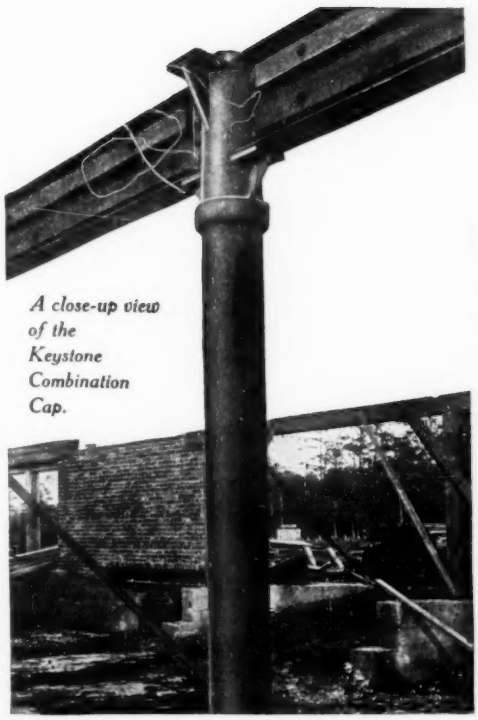

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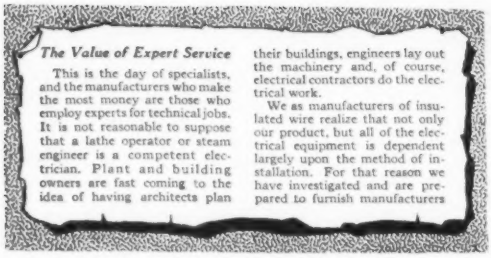

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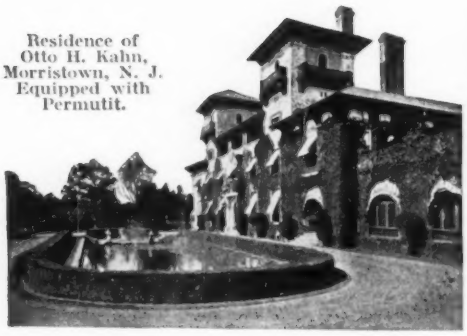

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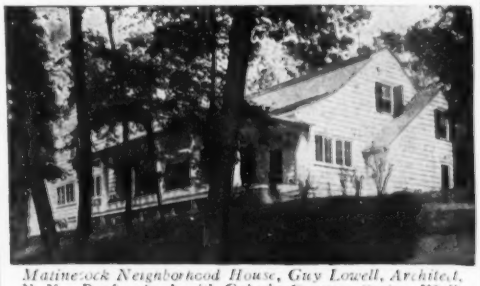

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Architect, Frank E. Newman, New York City.
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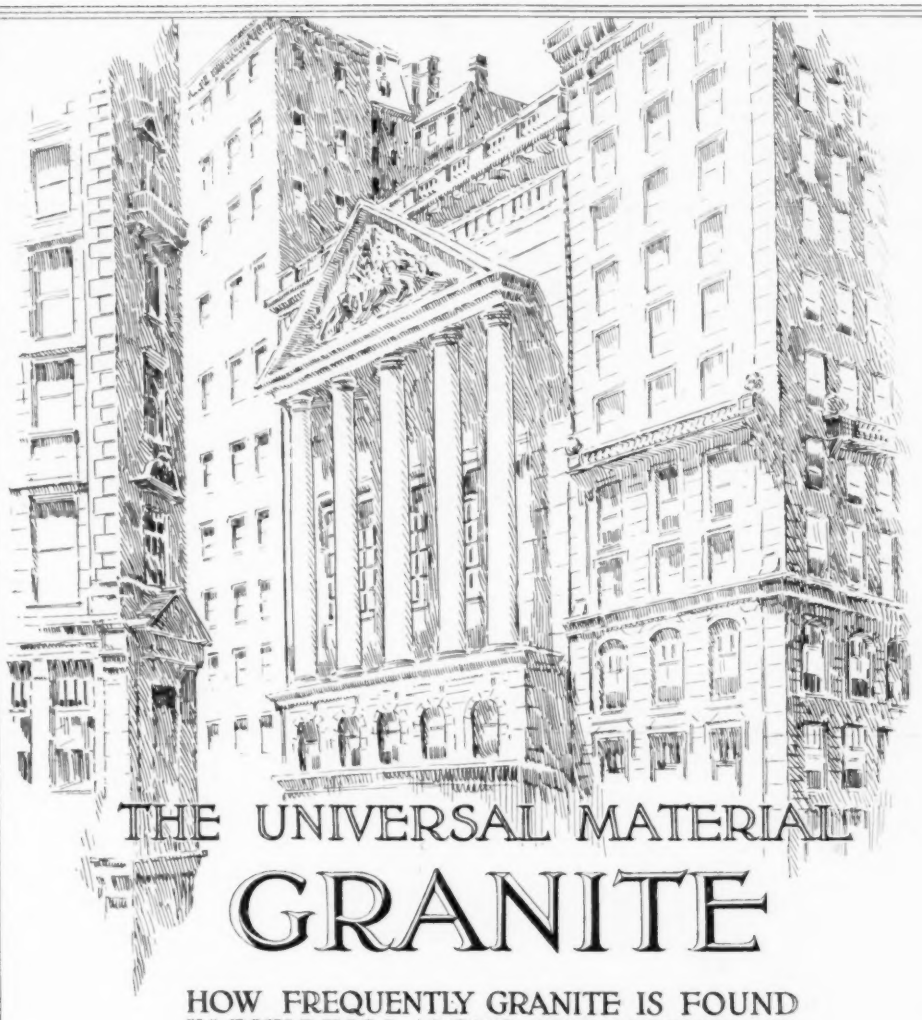

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GENERAL SLATE COMPANY

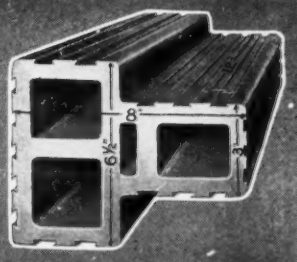
Connecticut State House
Hartford, Conn.

Roofed in 1880 with Pennsylvania slates that disintegrated.

Reroofed 1910, with Monson Lustre Slates that last forever

Heat Buildings With Less Coal

Any building will cost less to heat if the walls are built of this material.



This is the tile. The drawing below shows how it is built into the wall.

INTERLOCKING TILE

TRADE MARK

Heating engineers figured 100 tons of coal per season to heat the mansion shown below. It actually required only 60 tons, due to the perfect insulation provided by the Interlocking Tile walls.

These walls do not heat through—a gasoline torch directed against one side of the wall will hardly give a warmth that can be felt on the other side. The heat from the furnace is kept inside the building. It is not conducted through the walls to be wasted on the outside air.

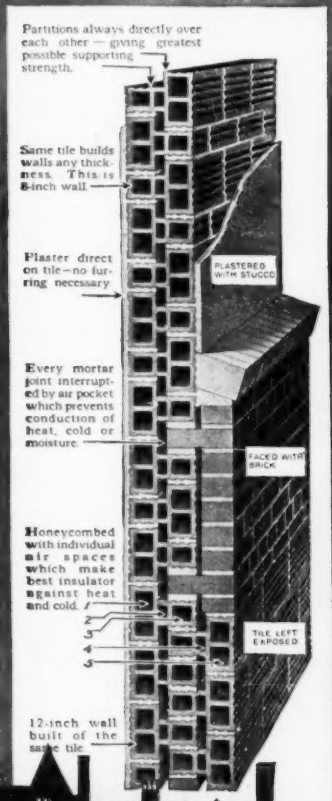
Hundreds of air spaces in the wall give this insulation. Even the mortar joints are interrupted by air spaces, which check all heat conduction. (See drawing.)

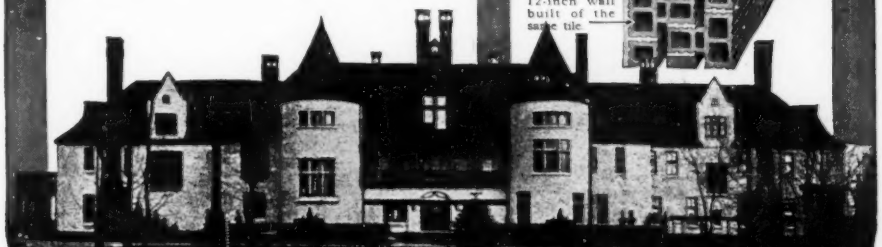
If you want to save coal bills, write for more information on Interlocking Tile—how it builds walls that are not only cold-proof, but heat-proof, moisture-proof and fire-proof as well.

Denison Interlocking Tile Corporation

508 Guardian Bldg., Cleveland, O.

35 Factories **145 Sales Offices**


Partitions always directly over each other—giving greatest possible supporting strength.
Same tile builds walls any thickness. This is 8-inch wall.
Plaster direct on tile—no furring necessary.
PLASTERED WITH STUCCO
Every mortar joint interrupted by air pocket which prevents conduction of heat, cold or moisture.
FACED WITH BRICK
Honeycombed with individual air spaces which make best insulator against heat and cold.
1
2
3
4
5
TILE LEFT EXPOSED
12-inch wall built of the same tile.



Residence of GEORGE McKESSON BROWN *Huntington, L.I.*
CLARENCE LUCE, *Architect*

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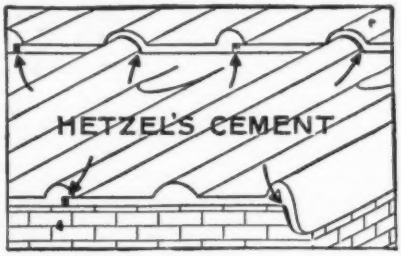
ELASTIC RUBBER ROOFING CEMENT

For—
all kinds of ROOFS
skylights, coping stones

Hetzel's Cement has many qualities that account for its precedence. Here are a few. It is unaffected by changing climatic conditions, retains its elasticity, adheres to glass but does not break it because it does not harden.



Hetzel's E. R. R. Cement prevents slates from loosening or falling out when nails or hooks rust off.

Supersedes solder on metal roofings—can be applied quicker and is cheaper. Desirable in new buildings—essential in old.

Architects specify Hetzel's because it makes a more lasting roof and lessens outlay for rapirs.

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SEE PAGE 301 "SWEET'S"

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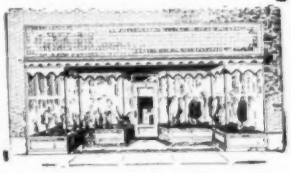

73000 Square Feet of Skylight

THAT is the area of the Lupton Rolled Steel Skylights over the 1600-foot craneway between these two buildings of the Ford factory. Two trains of 20 box cars each are loaded and emptied there every working day.

But its bigness is the least important point about this Ford installation. Lupton patented Rolled Steel Skylight costs more to manufacture than any other skylight made. Why was it chosen here?

For two reasons:

1. **Durability,**
2. **Water-tightness.**

Durability means freedom from glass breakage and corrosion. The glass in Lupton Rolled Steel Skylight does not touch metal at any point, neither is it puttied. Instead, it is held between resilient strands of specially-saturated oakum, which allow expansion and contraction to take place unhindered. Corrosion is minimized by making all parts exposed to weather of copper or brass.

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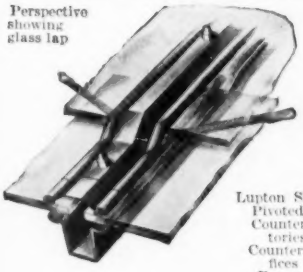
In a word, Lupton Rolled Steel Skylight is the most permanent skylight made, and the best protection for valuable equipment or products under it. The higher price is an investment, making it the cheapest in the end.

LUPTON ROLLED STEEL SKYLIGHT

PATENTED

Perspective showing glass lap



It is fully described in our No. 9 catalogue. Have you a copy?

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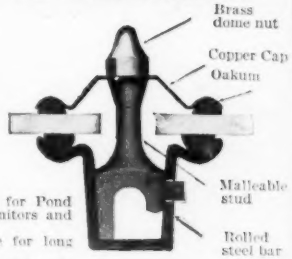
Philadelphia, Pa.



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Section of Interlocking Slat

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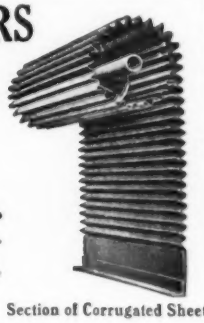
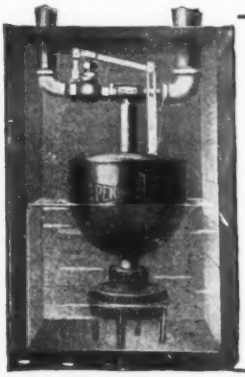


Section of Corrugated Sheet



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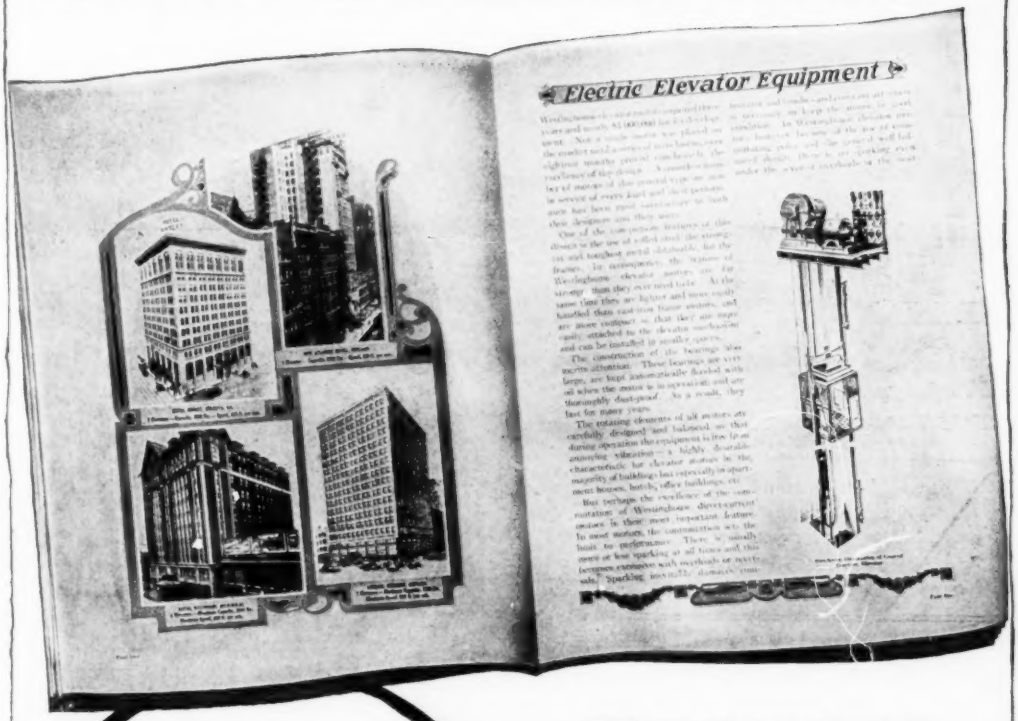

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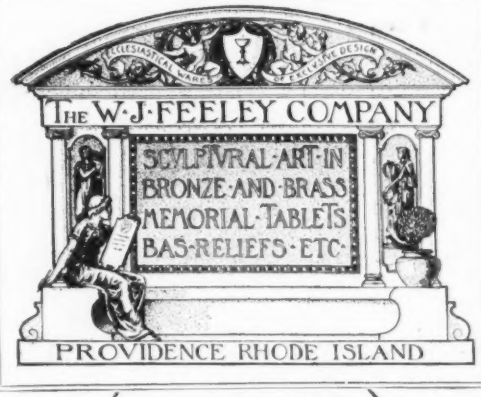

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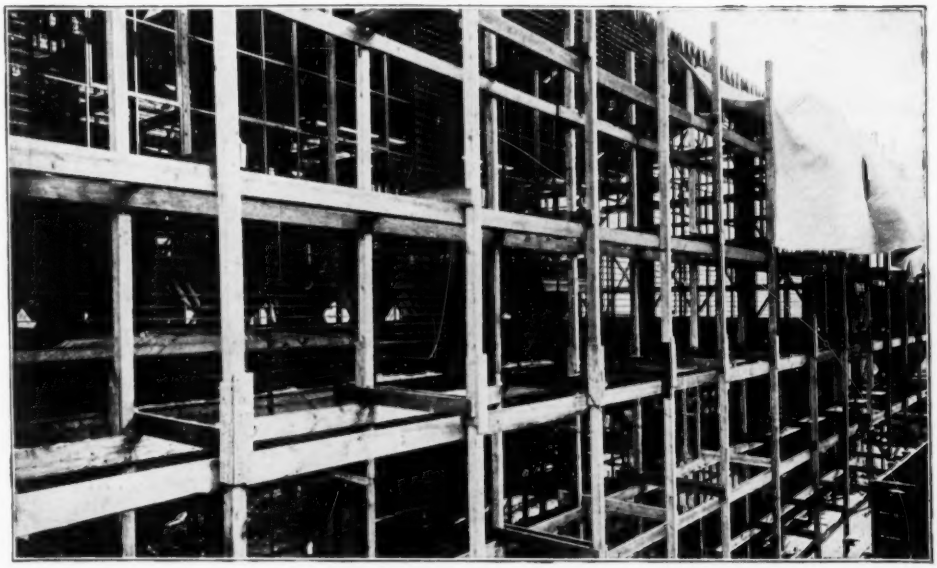

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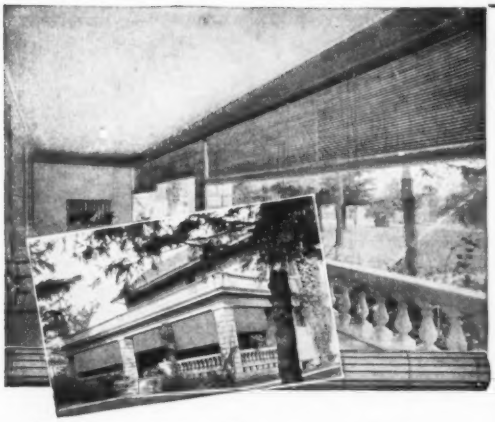

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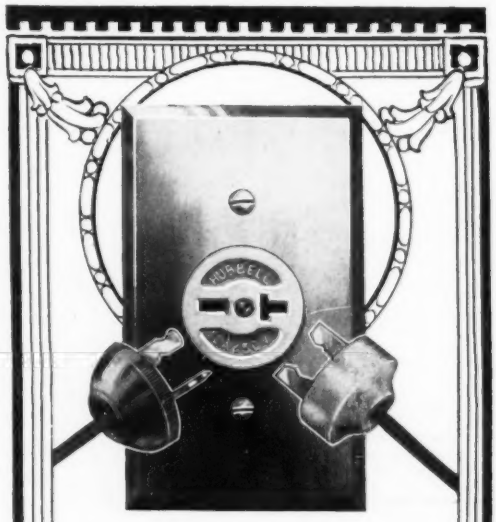

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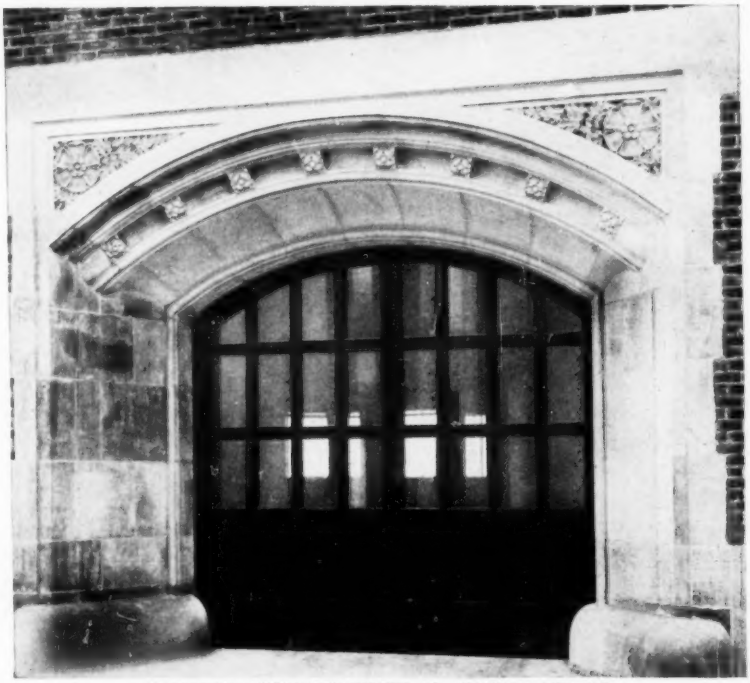

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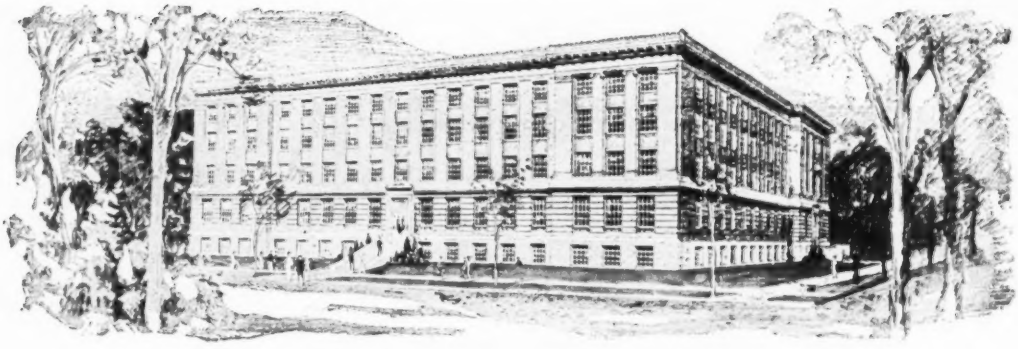

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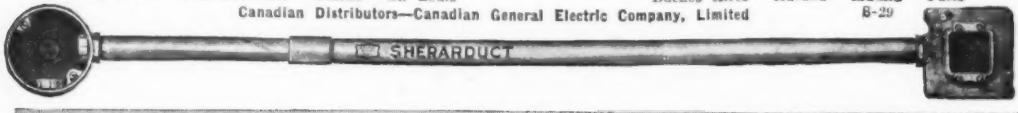

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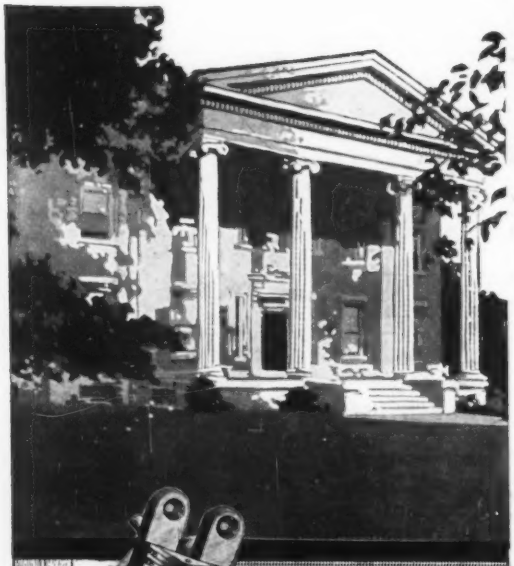

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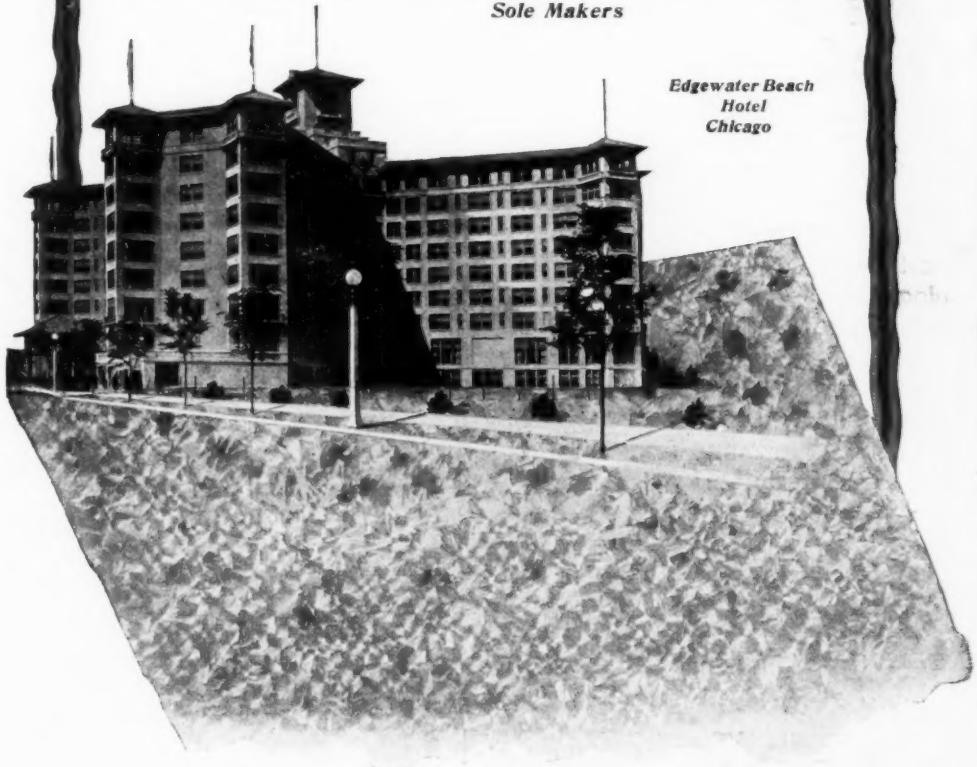
Sole Makers



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It is reasonable in cost and easy to erect. The meshes of expanded metal inclined in opposite directions give a perfect bond with plaster or concrete while the ribs give strength, rigidity and form to the structure and help to hold the wet concrete or plaster in place.

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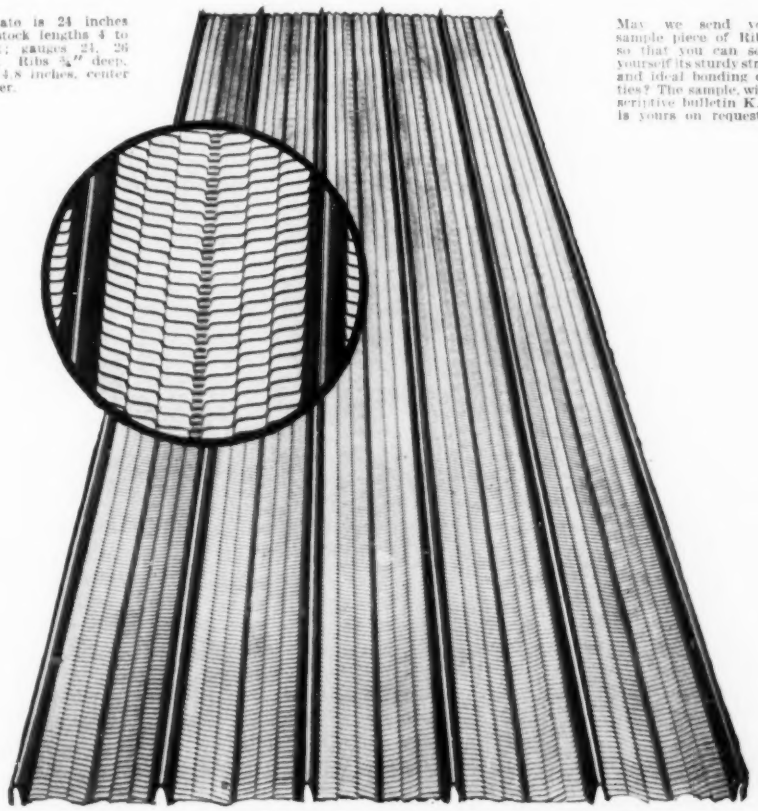
The plate is 24 inches wide; stock lengths 4 to 12 feet; gauges 24, 26 and 28. Ribs ¾" deep, spaced 4.8 inches, center to center.



May we send you a sample piece of Ribplex, so that you can see for yourself its sturdy strength and ideal bonding qualities? The sample, with descriptive bulletin K.A.R., is yours on request.

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House Beautiful Homes No. 1

was designed by a firm of prominent architects especially for HOUSE BEAUTIFUL readers. It embodies suggestions and answers inquiries that have come from hundreds of home-makers, and actually has been planned to order to meet the needs of any family desiring a practical, artistic, moderate-priced home.

The plans call for a nine-room wooden structure with veranda and sleeping porch. The architecture is an excellent example of the New England Colonial type, so generally admired for its brooding lines, its dignity, repose and homelike charm. The interior has been designed to harmonize with the exterior, and every room has been planned for convenience, airiness and the easy arrangement of furniture.

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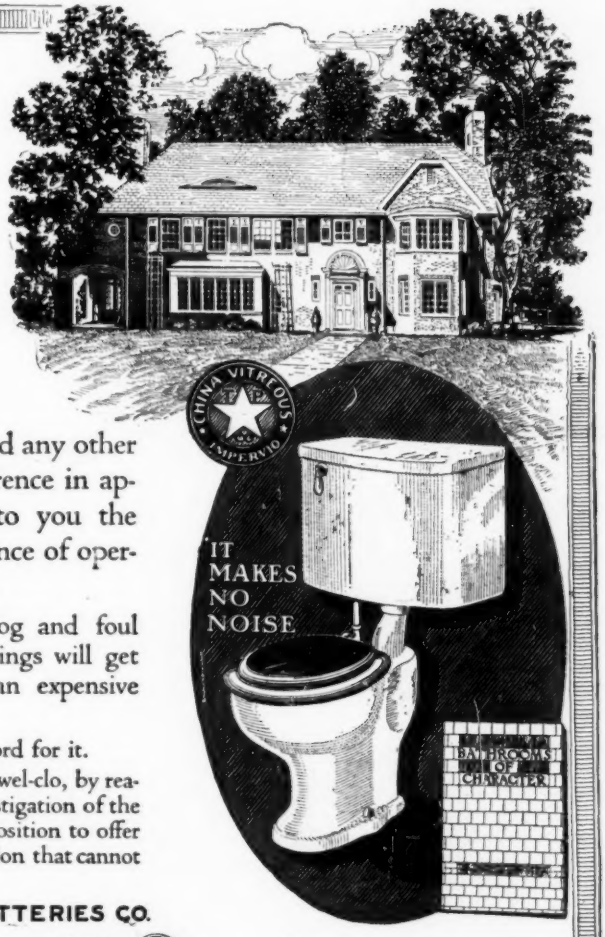
In Your Home

The Silent Si-wel-clo



Place the Silent Si-wel-clo and any other closet side by side—the difference in appearance does not disclose to you the mechanical superiority or silence of operation of one over the other.

You cannot tell which will clog and foul under use or which set of fittings will get out of order first and make an expensive plumbing job.

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RELIANCE BALL BEARING DOOR HANGER CO.
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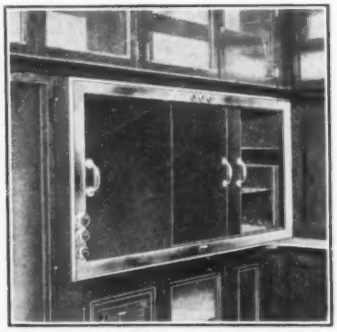

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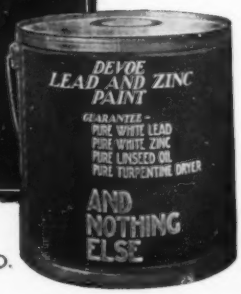

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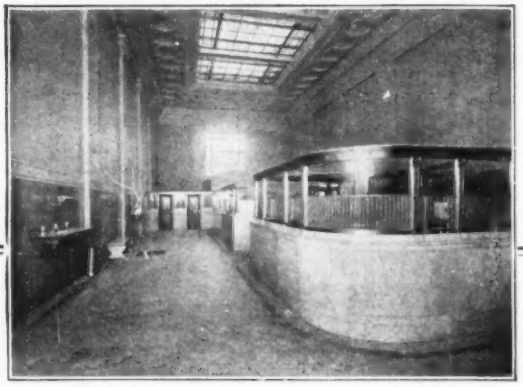

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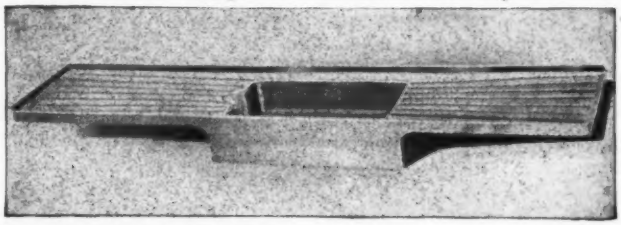

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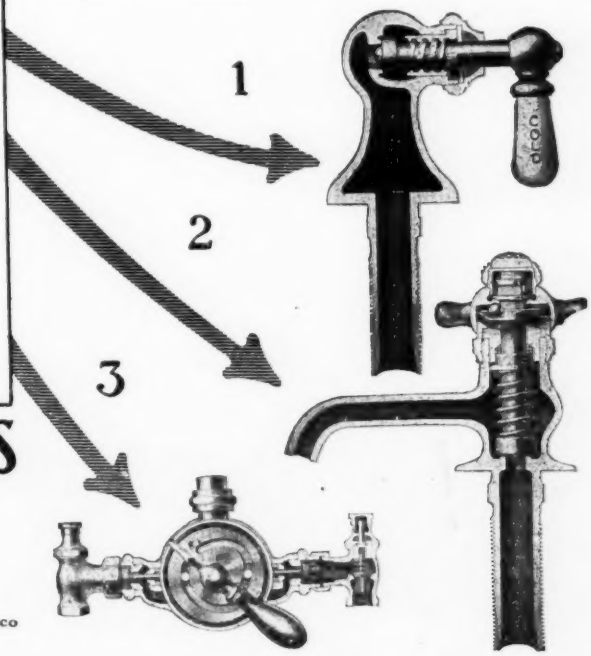

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